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Boletus Notebook 1

L. R. Hesler

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10746

Boletus affinis Pk.

In beech woods

Flat Creek, Swain Co, N. C.

Coll: L. R. Hesler & A. J. Sharp

Det: Snell

Aug. 1, 1937

Pileus 5-9 cm. broad, yellow-brown (near Isabella, Old Gold, R.), dry, glabrous, with a velvety feel.

Flesh thick, soft, white, not changing. Pores ochre-yellow, more or less angular, up to 1 mm. diam., most 0.5 mm. diam., up to 8 mm. long, adnate, subdecurrent, lines decurrent for short distance. Stipe 4-8 cm. x 8-16 mm., curved or flexuous, white but always with a purplish-brown band at apex, dry, not reticulate (except from occasional decurrent pores), solid, base pointed otherwise equal. Spores 9-12.6 x 3.6-5.4 μ .

Odor and Taste mild.

17042

Boletus affinis Pk.

Soil, frondose woods

Indian Creek, N. C.

July 8, 1945

Coll: L. R. Hesler

Det: W. H. Snell

Pileus 8-12 cm., broad, "olive ocher" to "yellow ocher", glabrous but plush-like. Flesh thick, soft, white, unchanging; odor and taste mild. Tubes adnate, seceding somewhat, surface "olive-ocher"; long, small, 2 per mm. Stipe 12-15 cm. x 1.5-2.5 cm., curved, pale tawny, dry glabrous, striate, stuffed with a large pith. Spores 10-15 x 4.5-5 μ . (spore print failed!)

14248

Boletus affinis Pk. (?)

On soil, oak woods

Monteagle, Tenn.

Coll: Mrs. Allen Tate

June 17, 1942

Pileus 3-6 cm. broad, not viscid, glabrous, Ochraceous Tawny (R.). Flesh soft, thick, white, unchanging; odor and taste mild. Pores yellowish-brown, slightly angular, depressed at stipe, attached, 8 mm. long, $1/3$ - $1/2$ mm. diam. Stipe 4-7 cm. x 10-17 mm., whitish, stained brownish, apex with a brownish ring, dry, spongy, glabrous.

Spores greenish-brown in mass, 9-12 x 3-4 μ , ellipsoid-fusiform.

13814

Boletus affinis Pk.

On lawn, Fountain City, near Knoxville

July 16, 1941

Coll: Karl Steinmetz

Det: W. H. Snell

Pileus 7-11 cm. broad, Sayal Brown, Tawny to Russet, dry, subtomentose. Flesh white, unchanging, thick, firm. Tubes white at first, then yellowish-flesh, unchanging, adnate, with decurrent reticulatiuous, slightly angular-rotund. Stipe 4-5 cm. x 2-3 cm., somewhat flattened and expanded upward, color variable; whitish and stained or tinted Cinnamon Drab, or entirely Cinnamon Drab; solid, dry. Spores elongate-ellipsoidal or cylindrical, 11-12 x 3.5 μ , near Sulphine Yellow (R.) in mass.

13818

Boletus affinis Pk.

On lawn, Fountain City (near Knoxville)

Det: W. H. Snell

July 16, 1941

Pileus 5-6 cm. broad, dry, Mikado Brown, glabrous.

Flesh thick, firm, white, unchanging. Tubes pale yellowish white, unchanging, adnate, rounded. Stipe 5-8 cm. x 12-18 mm., Avellaneous, reticulate in upper 2/3 (under lens), spongy pith (hardly solid). Spores near Snuff Brown (R.), in mass, cylindrical, 9-12 x 3-3.5 μ .

10866

Boletus affinis Pk.

Under Abies, 6000'

Roan Mt., Tenn.

Aug. 22, 1937.

Det: W. H. Snell

Pileus 8 cm. broad, clay-brown (Clay color, Ochraceous-Tawny, R.), dry, not viscid, glabrous, surface roughened. Flesh white, unchanging, mild taste. Tubes pale yellowish, edges concolor, rounded, 6-8 mm. long, $\frac{1}{2}$ to 1 mm. diam., adnate, depressed slightly at stipe. Stipe 4 cm. x 12 mm., solid, dry, equal, spotted clay-brown (white background), base white, not reticulated. Spores 10.14.4 x 3.6-3.8 μ .

6691

Boletus affinis Pk.

Atop Mt. DeConte

Coll: L. R. Hesler

Det: Snell

July 20 - '34

Cap 4-6 cm.; yellowish-brown; velvety, pruinose, viscid (at least when young), irregularly shaped white spots mark entire pileus; these appear to show through pellicle; flesh white, mild.

Tubes minute, rotund, 6 per mm., white. Not stuffed when young. Become dingy when wounded but no distinct color change. Old tubes become ochraceous sub-free.

Spores 4 x 12:25 μ , ellipsoid, 3 or 4 oil drops in each spore (no. not constant though).

Stipe colored like pileus, fading upward to pale cream at top. White tomentose, base. Top of stipe slightly reticulated from walls of tubes extended down stipe. Lower portion sometimes slightly striate-viscid, usually smooth.

24482

BOLETUS AFFINIS Pk.

Pileus dry, "dresden brown" to "buffy-brown", minutely velvety to subglabrous. Context white, unchanging; odor and taste mild. Tubes white, soon yellowish, dingy brown when rubbed, pores about 2 per mm.

Spores 8-11 x 3.3-4 μ , rusty in mass, near "buckthorn brown".

35113

BOLETUS AFFINIS

Beyond Maryville, pine woods, June 27, 1969

Pileus "hazel" to "chestnut brown," plush tomentose under lens, dry. Context white, unchanging, mild. Pores white then yellowish, scarcely changing where bruised, subdepressed around stipe. Stipe paler: clay color or cinnamon buff, base white, usually a ring at the apex, solid.

Spores 8.5-10 x 3-3.5(4) μ , near "buckthorn brown" in deposit (a rusty tint).

17077

Boletus affinis var. maculosus Pk.

Grassy Patch

Aug. 11, 1945

Pileus 5-9 cm. broad, "isabella color," "tawny olive",
"Saccardo's umber", to "snuff brown" with white spots.



23215

23215 - *Boletus affinis* var. *maculosus* PK.

10815

Boletus alboater Schw. (?)

Under hemlock

Elkmont, Tenn.

Coll: L. R. Hesler

Aug. 8, 1937

Det: Snell

Pileus 5-8 cm. broad, convex-plane, gray becoming gray with a distinct pink tint, viscid, glabrous, Flesh white, thick, not changing color, bitter taste. Tubes flesh colored, depressed-adnate, rounded, thin-walled. Stipe 4-6 cm. x 8-20 mm., equal or ventricose, glabrous, dry, not reticulated, solid, not annulate, smoky-brown. Spores 8-10 x 3.6 μ , sub-elliptical to sub-pyriform.

10868

Boletus alboater (?) Schw.

Under Rhododendron, in deep moss

Roan Mt., 6000'

Coll: L. R. Hesler

Aug. 22, 1937

Det: Murrill

Pileus 4-11 cm. broad, smoky brown, glabrous, viscid. Flesh thick, white, unchanging; taste mild; odor alkaline. Pores flesh-brown, near Sayal Brown (R.), mouths becoming greenish when bruised, staining paper green when in contact, 7-8 mm. long, depressed around stipe. Stipe 7-14 cm. x 10-18 mm., smoky brown, pruinose-dotted, not reticulate, not viscid, ventricose, tapering at apex, base white and usually pointed, solid. Spores 10.6-12.6 x 5.4-6.3 μ , fusiform-elliptic.

Murrill (Letter of 10-7-47) says not B. porphyrosporus, but probably B. alboater.

5087

Boletus alboater Schw.

Taste mild; flesh white to pink-gray to
blackish like stem and cap.

8234

Boletus alboater Schw.

On soil, mixed woods

Newfound Gap, N. C.

Coll: L.R.H.-A.J.Sharp 5300'

Det: Alice Caton (conf. by Snell) 8-17-35

Fits Murrill's description (N.A. Flora 9:135), except that pore mouths are large and irregular (in old specimens) 1 to $1\frac{1}{2}$ per mm. and spores rarely exceed 10μ in length. Reticulation on stipe of 2 older specimens.

Notes by Alice Caton



Boletus americanus

Botetius americanus

12180

Boletus auriporus Pk.

In grassy, sandy soil

Elkmont, Tenn.

Coll: L. R. Hesler June 11, 1939

Det: W. H. Snell

Pileus 2-5.5 cm. diam., convex, Tawny-Olive (R.), dry, matted-fibrillose. Flesh white, unchanging, taste slightly sour. Tubes yellow, adnate, more or less depressed around stipe, mouths about 0.5 mm. diam. Stipe 2-5 cm. x 4-10 mm., enlarged (ventricose) downward, not reticulated, ribbed, somewhat scurfy in appearance, nearly concolorous to pileus. Spores 10-12 x 4-5 μ .

B. subtomentosus?

24902

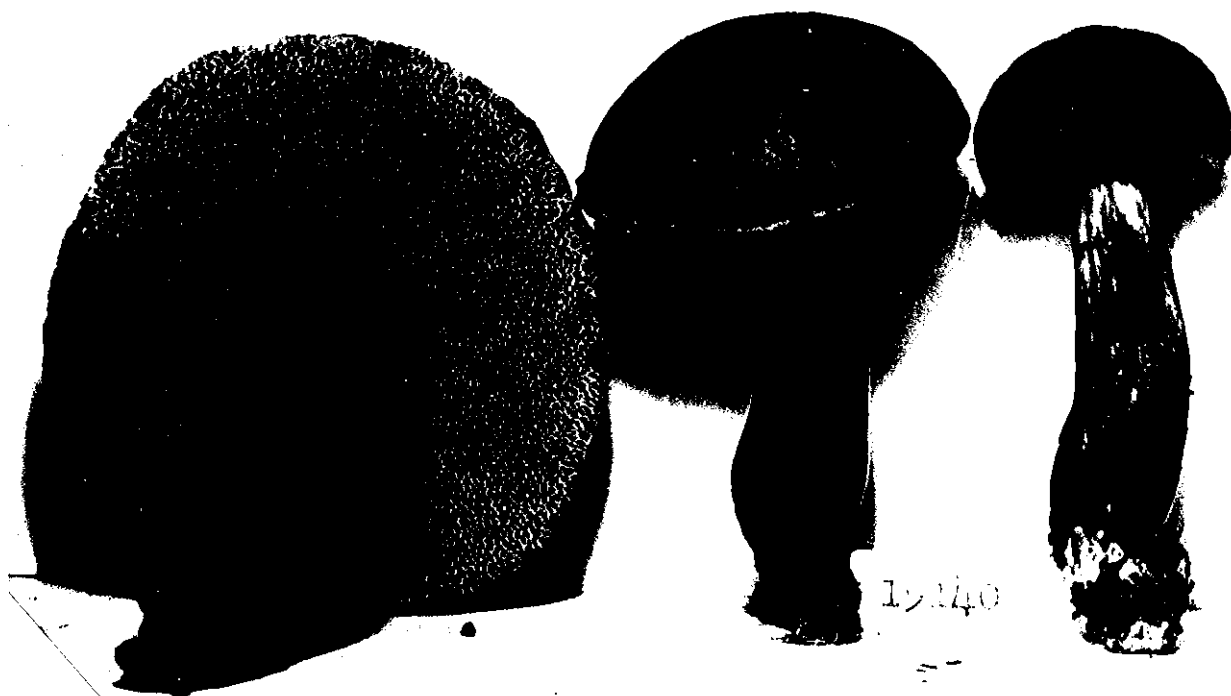


24902 - *Boletus auriporus* PK.

24902 - *Boletus auriporus* PK.



20551— *Boletus auriporus* Ph.



19140 - *Boletus auriporus* Ph.

10867

Boletus badius Fr.

Under Abies 6000'

Roan Mt., Penn.

Aug. 22, 1937

Det: L. R. Hesler (conf. Snell)

Pileus 9 cm. diam., reddish-brown, minutely wrinkled (under lens), glabrous, viscid. Flesh white, slowly turning blue (after 3-5 min.), (blue disappearing after 5 or 10 min.), thick at disk, thin at margin. Tubes greenish-yellow, blue when wounded, small, rounded, adnate, about 8-10 mm. long. Stipe 7 cm. long, 11 mm. diam. (apex), 16 mm. diam. (base), solid, glabrous, minutely dotted, dry, reddish-brown, red at apex, white at very base. Spores 10-16 x 3.8-5.4 μ .

13980

Boletus badius Fr.

In deep moss, Clingman's Dome

Coll: L. R. Hesler

Det: W. H. Snell Aug. 24, 1941

Pileus 4-6 cm. broad, brown to reddish-brown, subviscid, slightly fibrillose-tomentose. Flesh soft, thick, white, unchanging or slightly bluish-green; odor and taste mild. Tubes adnate, depressed, greenish, darker on bruising, decidedly ventricose, extending beyond margin of pileus. Stipe 4-6 cm. x 7-10 mm., tapering upward, concolor or more reddish, not reticulated, dry, solid, tomentose. Spores elliptical-fusoid, 12-16 x 3.5-4 μ , greenish (under 'scope).

13978

Boletus badius Fr. (?)

On soil, woods

Near Mt. LeConte

Coll: L. R. Hesler

Aug. 23, 1941

Det: W. H. Snell

Pileus 5-7 cm. broad, brown (Ochraceous Tawny, R.), tomentose, at times squamulose, viscid when wet. Flesh soft, white; odor pleasant, taste mild. Tubes adnate, depressed, pallid, then slightly greenish, about 1 mm. diam. Stipe 5-7 cm. x 8-11 mm., dry, yellowish (Primuline Yellow, R.), hollow, apex glabrous and ridged, not reticulated, base tomentose, pointed. Spores 9-12 x 4-5.5 μ , elliptical.

Snell not fully satisfied with his determination (Letter 1/4/42)

5273

Boletus badius Fr.

Mt. LeConte

Coll: L. R. Hesler

Det: Snell

July 20 - #34

Peck's description very brief. Add:

Tubes pale yellow before wounding; Spores $4 \times 14\mu$;
flesh rosy tinged at length.

These specimens: 5-7 cm. diameter of cap. $2-2\frac{1}{2}$ cm.
thick (cap). Stipe 0.75 to 1 cm. diam. at top.
1.5 to 2 cm. diam. base.

#5273 - Labelled B. decorus Frost(?).
Very near badius if collected under pine.
_Snell, Letter, 12-7-36.

13855

Boletus ballouii Pk.

Under pines

Fall Creek Falls, Van Buren Co., Tenn.

Coll: L. R. Hesler

July 23, 1941

Pileus 3-8 cm. broad, convex, dry, densely fibrillose, fibrils matted and appressed, Orange Cinnamon, at times olive-brown, red (about Hazel) when rubbed. Flesh white, unchanging, thick, firm; odor pleasant (slightly fragrant), taste mild at first, soon slightly bitter. Tubes white, unchanging, depressed, adnate, medium sized, slightly angular. Stipe 2.5-3.5 cm. x 1-2 cm., solid, dry, not reticulated, velvety-punctate all over, yellowish, not red when rubbed, base contracted. Spores 5-6 x 3-3.5 μ , elliptical, sub-reniform, smooth, olivaceous in mass (Deep Colonial Buff to Sulphine Yellow).

13880

Boletus ballouii Pk.

Soil, woods

Cades Cove

Coll: L. R. Hesler Aug. 3, 1941

Det: LRH (cf. W. H. Snell)

Pileus 8-11 cm. broad, near Cinnamon or Zinc Orange, reddish when rubbed, fibrillose-matted. Flesh thick, medium soft, white, unchanging; odor mild; taste mild, soon slightly bitter. Tubes depressed around stipe, yellowish, unchanging. Stipe 5-7 cm. x 15-20 mm., concolor or more deeply zinc orange, apex paler, not reddish when rubbed, dry, apex reticulate from tubes, solid, white within. Spores 5-6 x 3-3.5 μ .

These are the largest specimens we have seen. But, is it B. ballouii?

12935

Boletus ballouii Pk.

On clay bank

Cades Cove

Coll: L. R. Hesler Sept. 13, 1940

Det: W. H. Snell

Pileus 4-8 cm. broad, convex, dry, tomentose-fibrillose, Cinnamon to Ochraceous Tawny, becoming Zinc Orange (R.) when rubbed. Flesh thick, soft, white, unchanging; odor slightly of chlorine, taste slightly bitter. Tubes adnate, elongated radially nearer stipe, rotund outward, adnate-decurrent, whitish or tinted pale yellowish, mouths concolor. Stipe 2-2.5 cm. x 1-1.2 cm., curved, solid (?), abruptly pointed at base, Cinnamon, with splashes of Zinc Orange (R.), not reticulate, slightly furfaceous, dry. Spores 5.5-7 x 2.5-3.5 μ , whitish (?) under magnification.



19148 — *Boletus betula* Schw.

4491

Boletus bicolor Pk.

Mt. LeConte

Coll: A. J. Sharp

Det: A. C. July 20 - '34

Spores 4x9 μ (minimum size listed).

8191

Boletus bicolor Pk.

Under pine, hemlock & hardwood

White Oak Sinks, G.S.M.N. Park

Coll: L. R. Hesler 8-11-35

Det: W. H. Snell

Pileus 8-15 cm. broad, reddish-brown (yellowish brown when covered by old leaves), viscid, reddish-fibrillose-scaly dotted; flesh thick, spongy, white, quickly blue when cut, taste mild. Pores greenish yellow, about 1.5 cm. long, adnate, depressed at stipe, 2-3 per mm., blue when wounded. Stipe 6-10 cm. x 2.5-3.5 cm. (at apex), solid, reddish at base, yellow at apex, elsewhere cinereous, glabrous (?), not reticulated, tapering upward, flattened and expanded at cap. Spores dark reddish-brown to nearly black in mass, long-elliptical, 8-10 x 3.5-4 μ .



Boletus bicolor

17266

Boletus brevipes Pk.

On soil, pine woods

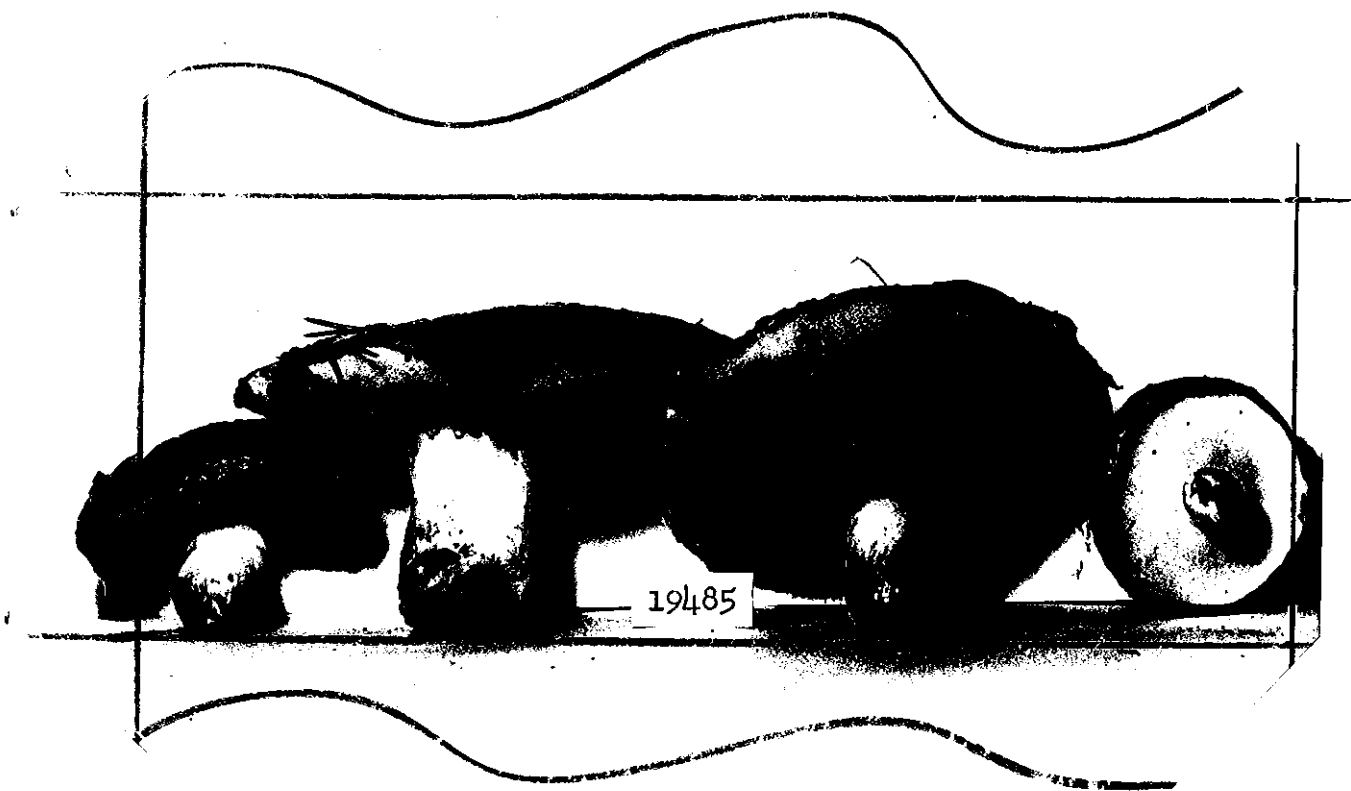
Norris, Tennessee

Coll: L. R. Hesler Nov. 25, 1945

Det: W. C. Coker

Pileus 4-7 cm. broad, glutinous, glabrous, brown ("cinnamon brown"), pellicle separable. Flesh thick, rather firm, white; odor and taste mild. Tubes adnate-subdecurrent, pale yellow, small (3 per mm.), dissepiments thick, without glandular dots. Stipe 4-7 cm. x 12-20 mm., whitish with yellowish tint, somewhat silky, moist, scarcely viscid, with scattered glandular dots at apex (dots not viscid). Annulus none. Spores ellipsoidal, 8.5-11.5 x 3-3.5 microns. (Coker's measurements 7.4-9.3(10) x 3-3.5 μ .)

Differs from the typical brevipes in its more yellow tubes and longer stipe. (See Coker's letter 12-13-'45.)



19485- *Boletus brevipes* Ph.



23437- *Boletus brevipes* Ph.

13868 Boletus brunneo-olivaceus Snell, Dick, Hesler

In mixed woods

Mt. LeConte

July 20, 1941

Pileus 5-9 cm., broad, convex, Light Brownish Olive, minutely tomentose, viscid. Flesh thick, yellowish, with reddish stains when cut; odor and taste mild. Tubes nearly free, concolor, small, rounded or slightly angular. Stipe 4-8 cm. x 7-12 mm., concolor but with amber to rusty-punctate dots throughout, tapering upward, solid, stained reddish within. Spores 10-12 x 4-5 μ , elongate, olive in mass.

Cespitose or gregarious, often 2-3 in a cluster.

This seems near B. hirtellus Pk.

12766

Boletus castaneus Bull. ex Fr.

Soil, woods

Mt. LeConte

Coll: L. R. Hesler

Aug. 4, 1940

Det: W. H. Snell

Pileus 1-2 cm. broad, reddish-brown, dry, velvety-tomentose. Flesh white, unchanging. Pores white, unchanging, stuffed when young. Stipe up to 3 cm. x 7 mm., solid, short-tomentose.



24531

24531 - *Boletus castaneus* Bull.



22042 - *Boletus castaneus* Bull. ex Fr.

12280

Boletus chrysenteroides Snell

On soil, under birch

Greenbrier

July 16, 1939

Det: W. H. Snell

Pileus 10 cm. broad, convex, dry, densely fibrillose, fibrils agglutinated into squamules, Sayal Brown or Sudan Brown (R.). Flesh thick, soft but firm, whitish, slowly changing to blue when cut. Tubes greenish, blue on wounding, large (1-2 mm.), at times radiately elongated. Stipe 13 cm. x 13 mm., tapering downward, sub-radicate, lacerate-scaly, the scales blackish, solid, not reticulated. Spores brown, 10-12.6 x 5.4 μ .

10045

Boletus chrysenteron Fr.

Trail: Indian Gap to Chimneys

Coll: A. J. Sharp & L. R. Hesler

July 26, 1936

Pileus convex, 2-5.5 cm. broad, viscid, dark-olive-brown at first, then olive-gray or cinereous, becoming cracked and areolate exposing pink tinges; flesh whitish, slowly blue on cutting, spongy, taste mild. Pores adnate, at times depressed around stipe, often slightly decurrent, becoming dingy-yellow, then slightly olive-greenish, bluish when bruised, waxy, edges not differently colored. Stipe about 5.5 cm. x 6-8 mm., whitish, but purplish from fine lines which anastomose slightly at base (not reticulate), purplish-pink zone at apex, base white-mycelioid; flesh within stipe red when first cut, soon turning blue, or greenish-blue, solid. Spores 9-14 x 3.5-5.3 μ , brownish under magnification.

(Compare: B. glabellus Pk.)

10814

Boletus curtisii Berk.

On soil, oak woods

Ball Camp Pike, near Knoxville, Tenn.

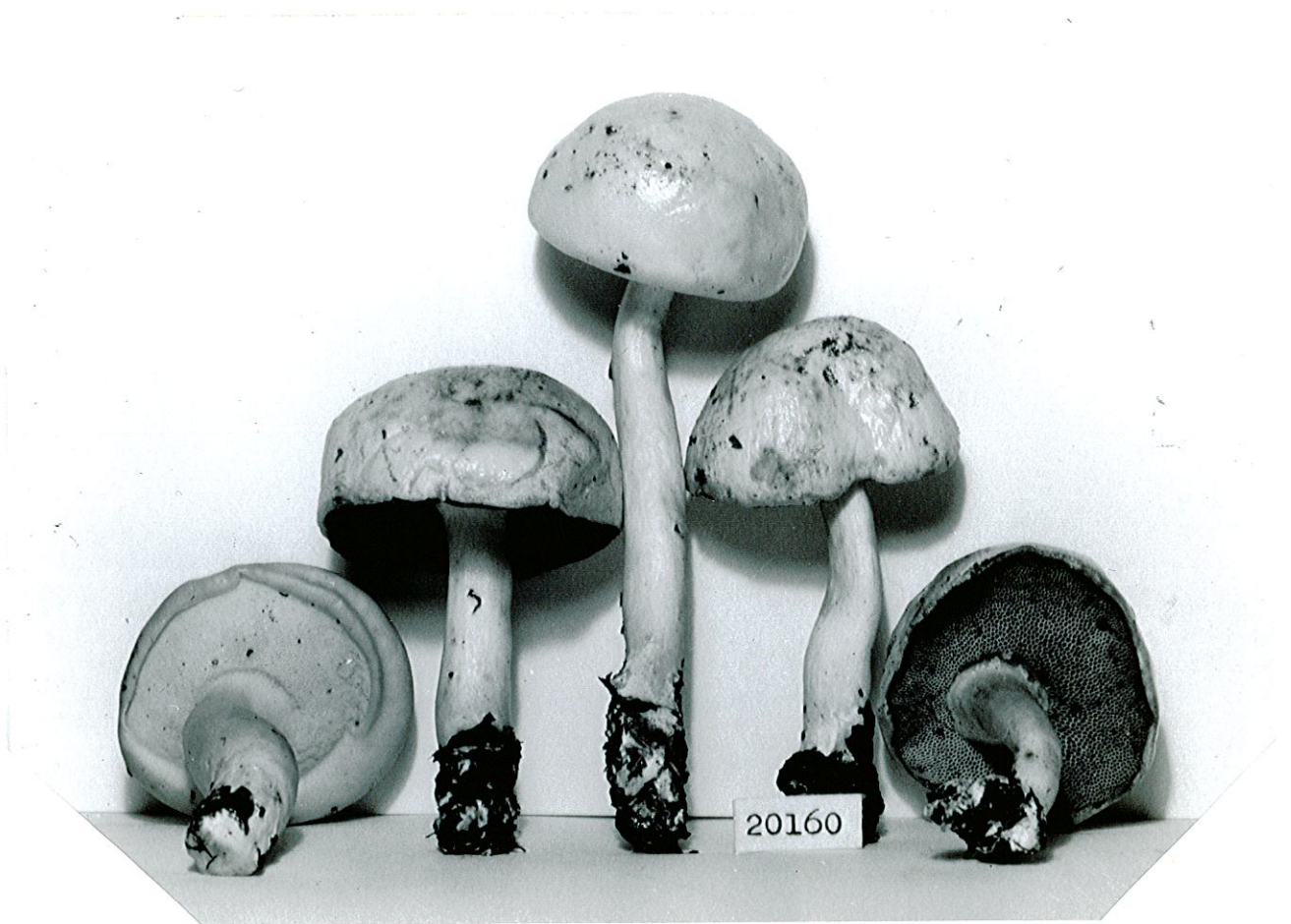
Coll: L. R. Hesler

Aug. 13, 1937

Det: W. H. Snell

Pileus 4.5 cm. broad, convex, white but covered by a golden-yellow gluten (gluten tinted amber) glabrous, margin even. Flesh white, moderately thick, taste mild. Pores adnate, becoming more or less free, stuffed when young, pale flesh-brown, easily separating one from another (each tube easily pulled out separately), mouths beaded with amber drops. Stipe 9.5 cm. x 7 mm., firm, solid, glutinous, yellowish stained, studded with golden-amber drops, glabrous. Spores 10-12.6 x 5-5.5 μ ., elliptical, bright yellow.

N.A.F. 9:143-144. 1910.



Boletus curtisii

12281

Boletus eximius Pk.

On soil, Mt. LeConte

Coll: L. R. Hesler Aug. 6, 1939

Det: W. H. Snell

Pileus 8-10 cm. broad, convex, reddish-brown (Army Brown, Natal Brown, Chocolate, R.) appearing glabrous to naked eye but under lens densely covered with a short tomentum, viscid. Flesh thick, white, unchanging; odor none, taste mild or none. Tubes Cinnamon Brown (R.), 1.5 cm. long, adnate, depressed around stipe, pores small (3 per mm.). Stipe 9 x 2 cm., Dark Purple Drab (R.), dry, not reticulated, no annulus, scaly, solid. Spores 11-18 x 3.5-4.5 μ .

12343

Boletus eximius Pk.

Under laurel-hemlock

Highlands, N. C.

Coll: L. R. Hesler Sept. 5, 1939

Det: LRH

Pileus 12 cm. broad, convex, dry, subviscid when wet, chocolate (R.), darker when bruised or wet, tomentose (under lens). Flesh thick, firm, grayish, with splashes of purplish-pink; odor slight, taste mild. Tubes Antique Brown (R.), mouths darker (dark red-brown when rubbed--under lens), adnate, depressed around stipe, hymenial surface ventricose, 2 cm. long, 0.5 diam. Stipe very rigid, solid, 10 cm. x 2.5 cm., dry, near Burnt Umber, dark furfuraceous, not reticulate, flesh like pileus. Spores Cinnamon (R.) in mass, elliptical, 12-15(17) x 4.5-5.5(6) μ .

10749

Boletus eximius Pk. (?)

On soil, beech woods

Flat Creek, Swain Co., N.C.

Coll: L. R. Hesler

Aug. 1, 1937

Det: W. H. Snell

Pileus 10.5 cm. diam., reddish-brown, dry, subglabrous.
Flesh white, tinted reddish-brown, unchanging, thick, soft;
odor mild, taste mild. Pores deep brown, small (2 per mm.),
rounded, mouths concolor, up to 12 mm. long. Stipe 7 cm.
x 16 mm., dingy brown, squamulose, not reticulate, cavernous.
Spores 11-14 x 3.6 μ .

8158

Boletus felleus Bull.

On grassy soil, woods road

White Oak Sinks, Blount Co., G.S.M.N.P.

Coll: L.R.N. - A. J. Sharp

Det: W. H. Snell

8-11-'35

Pileus 3.5-5.5 cm., viscid, brownish-flesh color (about Vinaceous Fawn, R.), convex-conical, surface velvety with closely appressed fibrils. Flesh whitish, soft, thickish, taste bitter (like B. felleus). Pores flesh-colored, irregular and often angular, about 2 per mm., adnate becoming depressed around stipe. Stipe 2-4.5 cm. x 7-13 mm., somewhat flattened, hollow, not reticulated, apex distinctly olive-green, minutely velvety, basal portion dingy fawn color, white mycelioid at base.

Spores elongate-ellipsoidal, 8-9 x 3.5-3.75 μ .

17086

Boletus felleus Bull.

In oak woods

Cades Cove

Coll: L. R. Hesler

Aug. 8, 1945

Pileus 7-12 cm., convex, "buff pink" to "vinaceous fawn," not viscid, appressed-tomentose. Flesh soft, white, unchanging, bitter. Tubes flesh colored, slightly depressed. Stipe 6-8 cm. x 10-22 mm., tapering upward, distinctly greenish, "dark olive-buff," to "citrine drab" to "light yellowish olive", spongy, becoming cavernous from grubs, velvety-tomentose, dry. Spores 8.5-10 x 4-4.5 μ .

Is this a form of B. felleus?

19158 Boletus felleus var. minor Coker & Beers
 Laurel Falls Trail
 Coll: L. R. Hesler July 27, 1949

Pileus 24-33 mm.. diam. Flesh white, bitter.
Tubes white then flesh-color. Stipe 3-4 cm. x 5-8 mm.,
base sub-bulbous or not. solid.

13912

Boletus ferrugineus Frost

In woods, Cades Cove

Coll: L. R. Hesler & S. L. Meyer Aug. 3, 1941

Det: W. H. Snell

Pileus 4-8 cm. broad, convex, dry, fibrillose, dark-brown. Flesh white, changing to pink when cut, thick, firm; odor and taste mild. Tubes whitish, reddish brown when bruised, then flesh-tinted, free. Stipe 3-4 cm. x 2-3 cm., ventricose, reticulated, solid, pale above, reddish-brown below. Spores smoky-brown in mass, 9-10 x 3-3.5 μ . Cystidia cylindric, stalked, with brown contents, 36-40 x 6 μ .

Snell (6-4-42) says it looks like ferrugineus Frost "which I once thought was a new species, pseudodecorus Snell & Dick.

17087

Boletus ferrugineus Frost subsp. vinaceo-
griseus Snell, Dick & Hesler

In oak woods

Cades Cove

Coll: L. R. Hesler

Aug. 8, 1945

Pileus 4-6 cm. broad, "brownish drab" to "vinaceous drab," velvety, dry. Flesh soft, white, pinkish brown when cut, taste mild. Tubes whitish, brown when bruised, depressed around stem. Stipe 5-10 cm. x 8-14 mm. (base 22 mm.), tapering upward, "sage brown," dry, spongy, cavernous-hollow (by grubs). Spores 10-12 x 4-5 μ , smooth.

Has the stature of B. gracilis, but pileus color is wrong for that species.

Snell (Letter Mch. 16 - '49) does not know this one.

19018

Boletus fraternus Pk.

On lawn

A. J. Sharp's

Coll: A.J.Sharp

July 4, 1949

Det: L. R. Hesler

Pileus 2-4.5 cm. broad, convex, dry, velvety-tomentose, "claret brown" (young), later "madder brown", "cacao brown", "brick red", or "prussian red", with a rosy tint, margin paler and rimose, the cracks yellow. Flesh "mustard yellow", blue when cut, changing back to yellow, firm, thick; odor mild, taste mild to sub-acid. Tubes stuffed at first, depressed around stipe, extending down stipe in lines, up to 8 mm. long, mouths irregular angular to daedaloid, at first "primuline yellow" to "olive-ocher", finally "citrine" to "light yellowish olive", blue when bruised. Stipe 2-5 (7) cm. x 4-8 (10) mm., more or less curved, not reticulated, ridged at top, minutely granulated, dingy brownish with a tint of red or "etruscan red", apex greenish, base yellow, firm, equal, solid. Spores 9.5-12.8 x 4-6.4 microns, ellipsoidal, smooth. Cystidia ventricose, with long narrow apex, projecting 28-35 microns, 8-9 microns diam.

18637

Boletus fraternus Pk.

On wet, mossy bank

Cades Cove

Coll: L. R. Hesler Aug. 14, 1948

Det: LRH (cf. W. H. Snell)

Pileus 2.5-4.5 cm. broad, convex to nearly plane, red ("prussian red" to "ochre red"), dry, plush-like and velvety. Flesh soft, thick, white quickly blue when cut; odor and taste mild. Tubes yellowish then greenish, quickly blue when rubbed, adnate then depressed, medium-sized, often radially elongated. Stipe 5-7 cm. x 4-10 mm., solid, reddish ("etruscan red"), yellow at base and top, not reticulated, more or less equal, dry. Spores 10.5-12.5 x 4.6-5 μ .

17079

Boletus Frostii Russell

Near LeConte

Coll: M. Boarts

Aug. 11, 1945

Det: L. R. Hesler

Pileus 5-8 cm., "brick red," "carmine", "brazil red".

Stipe 7-12 cm. x 12-20 mm., "orange-vinaceous".

12856

Boletus frostii Russell

Photo

Cades Cove

Coll: L. R. Hesler Sept. 1, 1940

Det: L. R. Hesler (conf. W. H. Snell)

Pileus 6-11 cm. broad, viscid, near Ox-blood Red (R.).
Flesh white to pale yellowish, changing to greenish-blue
when cut (slowly and slightly); odor and taste mild.
Tubes with red mouths, somewhat blue on wounding, adnate,
depressed around stipe. Stipe 6-9 cm. x 12-20 mm., solid,
Geranium Pink (R.), distinctly reticulated, solid, often
curved. Spores Brownish Olive (R.) in mass; 14-17 x 4-5.5 μ .



257

25780 - *Boletus peckii* Frost
Frostii



12856 - *Boletus frostii*

13848

Boletus fulvus Pk.

In oak woods

Near Mt. LeConte

Coll: L. R. Hesler

July 20, 1941

Pileus 5-9 cm. broad, convex, dry, rugose, with conspicuous pits, dry, Pinkish Cinnamon, margin paler, pruinose (under lens). Flesh white, unchanging, firm, thick; odor and taste mild. Tubes adnate, depressed, yellowish (when young), finally greenish, unchanging when bruised, mouths whitish dotted, slightly angular. Stipe 7-10 cm. x 12-18 mm., solid, dingy whitish, often with splashes of red, at times reddish glandular dotted to apex which is yellow (a yellow apical band), equal or tapering upward, not reticulated. Spores 10-12 x 4-5 μ , elongate, smoky olive in mass.

Is this (near) B. alutaceus?

Snell's letter (Aug. 11-'50) says B. fulvus Pk. will do as a tentative determination. It is near B. alutaceus. (See MacIlvaine pages 465-466).

10747

Boletus fumosipes Pk.

In beech woods

Flat Creek, Swain Co., N. C.

Coll: L. R. Hesler & A. J. Sharp

Det: Snell

Aug. 1, 1937

Pileus convex, 6-7 cm. broad, Buffy-Brown or Saccardo's Umber (R.), dry, densely appressed hairy-fibrillose, aereolate-cracked around outer third. Flesh soft, white, turning pink when cut, odor alkaline, taste not bitter but somewhat unpleasant, rather thick. Pores adnate, angular, about 1 mm. diam., smoky color, darker when bruised, depressed around stipe, pore-lines decurrent on stipe. Stipe 6-7 cm. x 8-10 mm., not reticulate, dry, brownish, with abundant dark points, solid (cavernous from grubs), base curved and white-mycelioid. Spores 9-12.6 x 5.4 μ .

5088

Boletus fumosipes Pk.

Near Highlands, N. C. (fairly common
in vicinity)

July 27 - '34

Coll: Mrs. L. R. Hesler et al.

Det: Snell

Pileus brown, cracked, showing whitish flesh beneath; tomentum appears divided by fine furrows. Cap 2.5 to 4.5 cm. wide, convex, not becoming plane. Flesh 1 cm. thick in center, dingy white, slowly showing blue coloration after wounding. After standing, blue disappears. (1 specimen with cap reddish stained.) Stipe 3 to 6 cm. long, 1 to 1.5 cm. broad, tapering upward from very slightly enlarged base; concolor; slightly striate, not reticulate; brown streaked; outer layer peeling in places. Tubes whitish, at length becoming dingy; free, forming stratum; up to 7 mm. long. Mouths concolorous angular, 1.5 per mm.; tubes changing to blue when wounded; (becoming gray-brown rather than flesh color with age.).

Spores 10-12.6 μ long, mostly 11 μ by 3.5-6 μ wide, mostly 4.5 μ .

#5088 - Labelled near B. sordidus Frost. Never having collected B. sordidus Frost, I cannot be certain but I think this is B. fumosipes Pk. in spite of lack of greenish band at the apex of stipe. Sordidus is not described as being rimose or having flesh change to blue. Besides the spores of sordidus at Albany are somewhat broader and yellow instead of pale brown.

—Snell, Letter, 12-7-36.

18036

Boletus glutinosipes Snell & Hesler

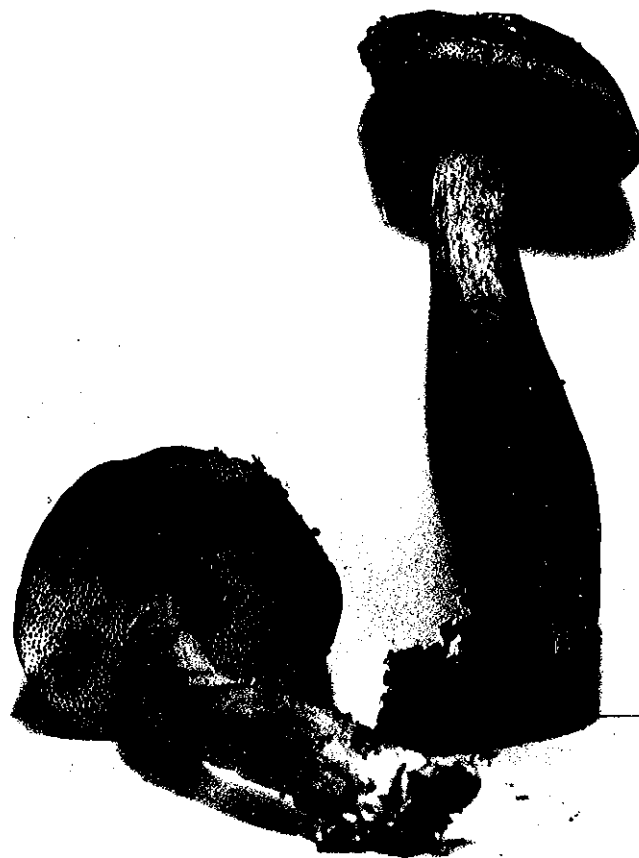
In humus, mixed woods

Cades Cove

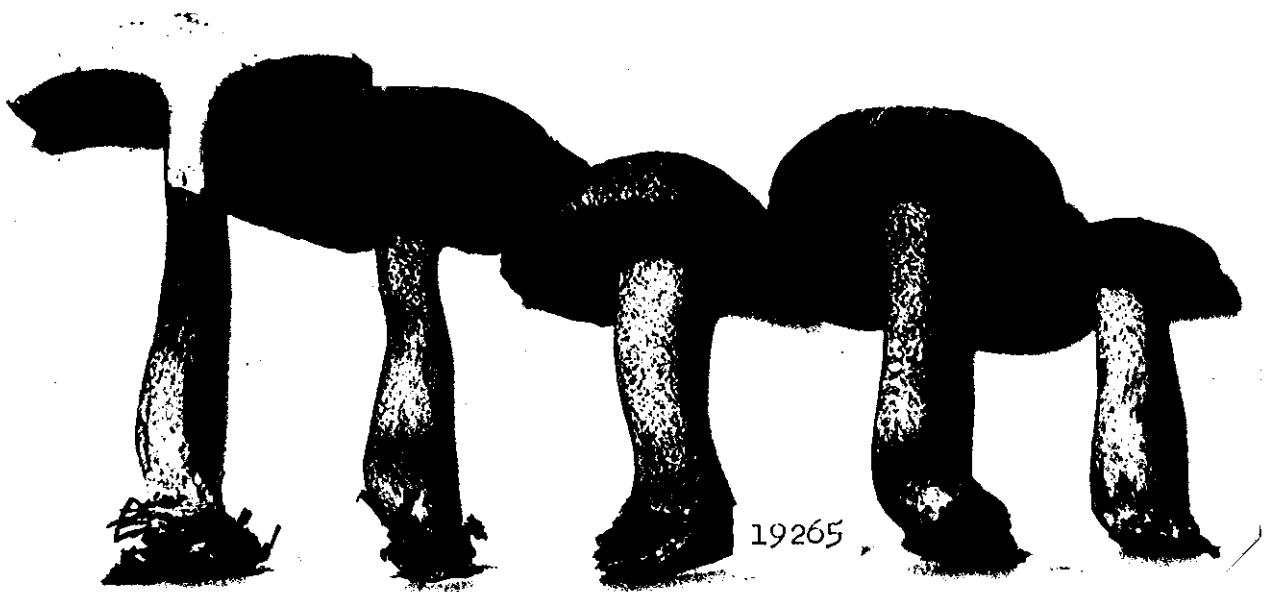
Coll: L. R. Hesler

Sept. 10, 1947

Pileus 3.5-7.5 cm. broad, convex, reddish-brown (not matched), viscid, fasciculate-tomentose, margin incurved. Flesh spongy, white, slightly pink when cut; odor and taste mild. Tubes "pale greenish yellow," reddish-brown when bruised, adnate with a decurrent line, about 2 per mm., margin sterile. Stipe 4-7 cm. x 5-12 mm., decidedly lubricous, almost glutinous, smooth, white above, stained yellow or brown below, with golden granules more or less throughout, equal, solid. Spores ellipsoidal, smooth, 11-15 x 4.8-5.3 μ .



21468 -- *Boletus glutinosipes* Snell & Hesler



19265 — *Boletus granulatus* L.

17080

Boletus griseus Frost

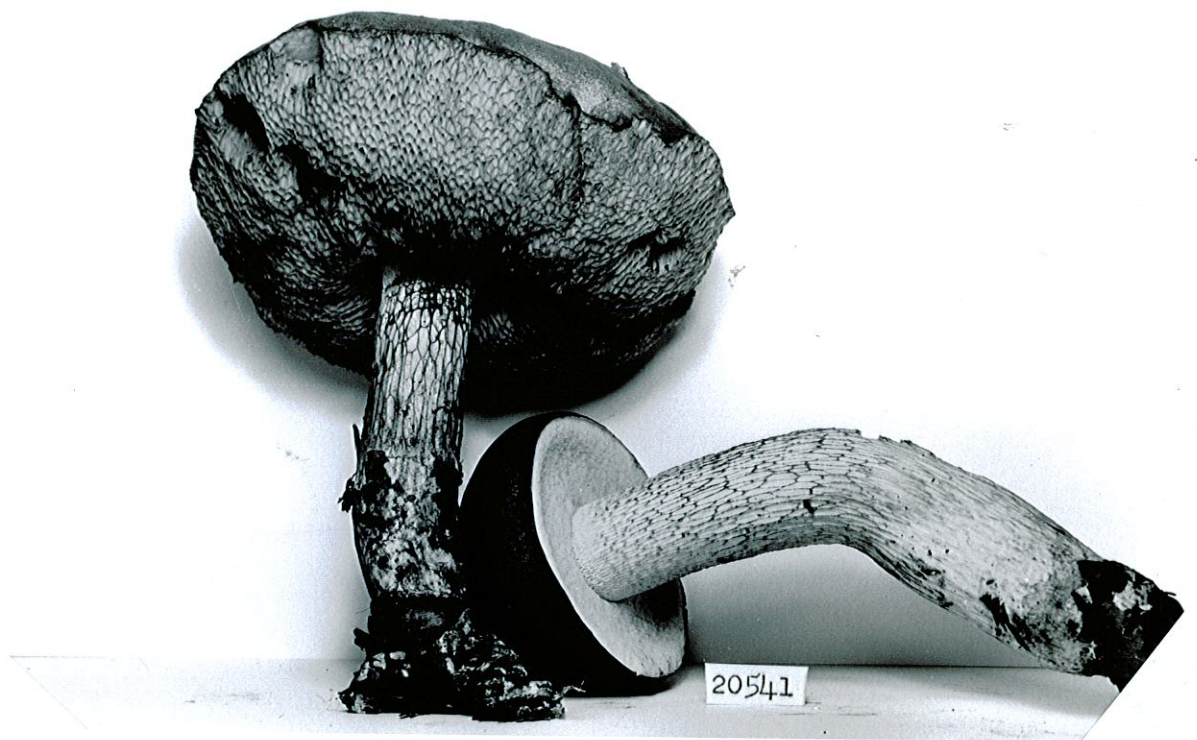
In oak woods

Cades Cove

Coll. & Det: L. K. Hesler

Aug. 8, 1945

Pileus 5-12 cm. broad, dry, "fuscous" when young, then grayish, near "drab-gray" (not matched), tomentose, somewhat glabrescent, margin free. Flesh soft to firm, pallid, pinkish-brown when cut; odor slight, taste mild. Tubes 4-5 mm. long, white at first, pallid at maturity, brown when bruised, decurrent, at times depressed. Stipe 6-9 cm. x 15-25 mm., pallid or yellowish-brown when bruised, distinctly reticulated all over, base pointed and often curved, equal, or at times ventricose (up to 42 mm. diam.), solid. Spores 11-12 x 4-5 μ .



Bolbitis griseus

23457

Boletus hirtellus Pk.
in pine woods, near Walland
October 26, 1959

Photo

Pileus 3-6 cm., viscid, "orange buff" to "pale yellow-orange," at times "capucine yellow" to "light ochraceous orange," densely fibrillose-tufted, the tufts slightly brownish. Flesh pale yellow. Tubes adnate, angular, 1.5-2 per mm., pale yellow then dull yellow to brownish. Stipe 4-6 cm. x 8-12 mm., often crooked at base, orange yellow above, dingy below, reddish-brown punctate throughout, solid, flesh yellow, equal.

Spores 8-10 x 2.5-3 μ , in mass: "brownish olive."



23457

23457 - *Boletus hirtellus* PK.

19707

Boletus illudens Pk.

In oak woods, Maloney Heights

Coll: L. R. Hesler July 25, 1950

Det: L. R. Hesler

Pileus 4-7 cm. broad, dry, densely matted-fibrillose, "saya brown", darker when rubbed. Flesh pale pinkish ("pale cinnamon pink"), becoming slightly darker when cut and exposed; odor pleasant (nutty), taste mild. Tubes at first bright yellow, greenish at maturity, turning blue-green on bruising, adnate, rather small, 6-9 mm. long. Stipe 4-5 cm. x 17-22 mm., ventricose or tapering downward, prominently reticulated, "pale ochraceous salmon", base abruptly pointed, matted-fibrillose, solid, flesh "pale cinnamon pink". Spores 9.5-11.5 x 3.2-4 microns, "metal bronze" in mass.

Specimens of B. illudens Pk. were borrowed by me (#12523) from Mrs. Alma Beers, University of North Carolina. Examined on August 15, 1950, and while larger than mine, the stipe characters were strikingly similar.



Lurid Bolete.

$\frac{3}{4}$ natural size.

Boletus luridus ^{Fries} ~~Schaeffer~~.

Reputed to be poisonous.



18968 - *Boletus luridus* Schaeff.

19380

Boletus luteus L.

Under rhododendron, Sargent's Highlands, N.C.

Coll: L. R. Hesler Sept. 14, 1949

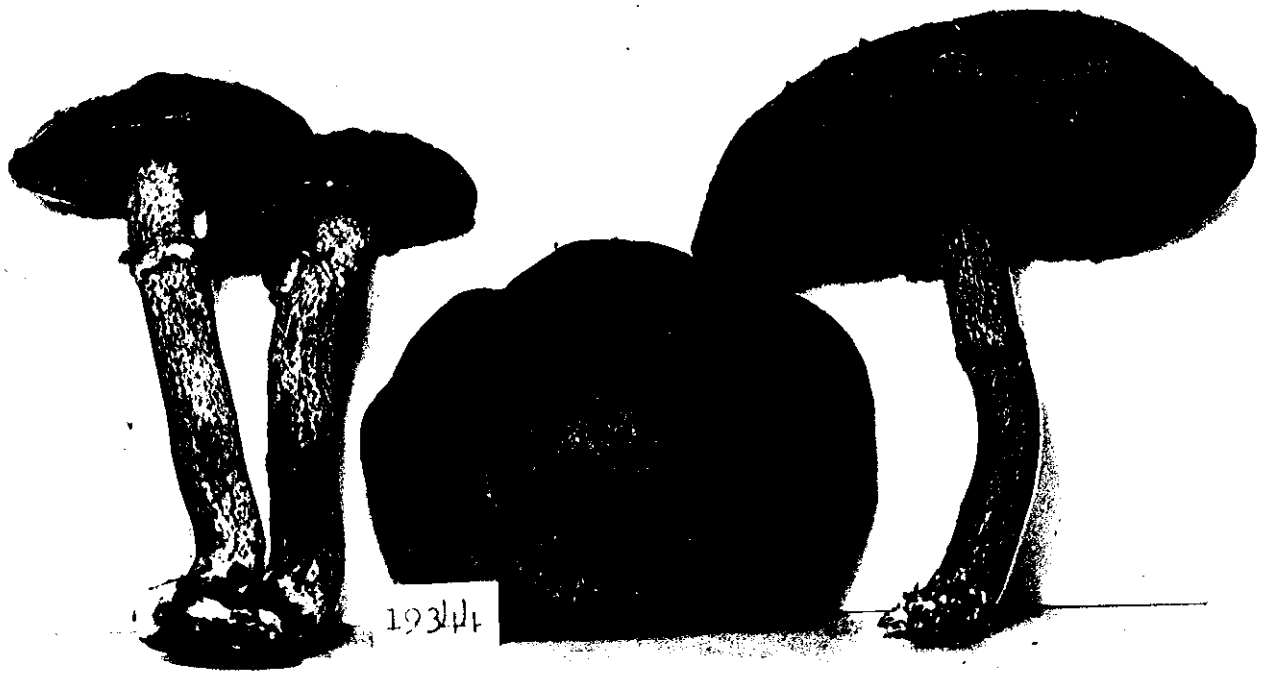
Det: W. C. Coker

Pileus 3-4 cm. diam., viscid, pellicle separable, "ochraceous buff" to ochraceous-tawny, glabrous, margin even, incurved and sterile. Flesh thick, rather firm, pale yellow, unchanging, without taste or odor. Tubes adnate, running down stipe to form reticulations at apex, yellow, tinged greenish, reddish brown when bruised, angular, 1-2 per mm., up to 5 mm. long. Stipe 3-4 cm. x 5-6 mm., reddish-brown, not reticulated, no annulus, solid. Spores 8-10 x 3.2-4 (4.5) μ , ellipsoidal; color in mass: "Saccardo's olive."

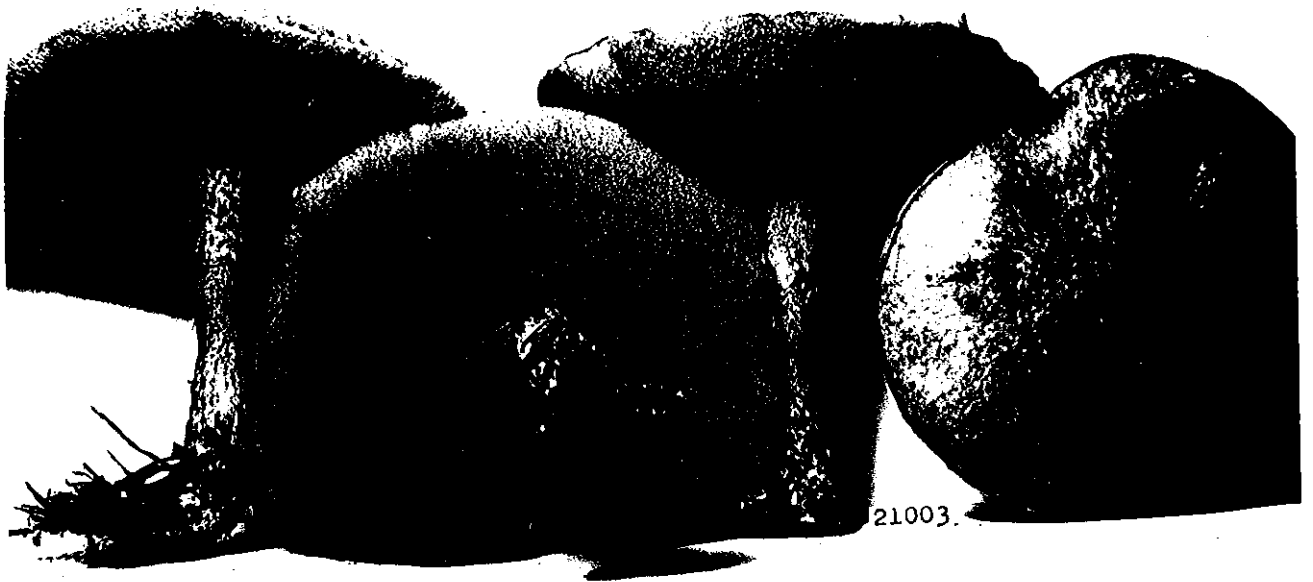
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23206 - *Boletus* ~~sub~~ *luteus* Pk.



19344 — *Boletus luteus* L.

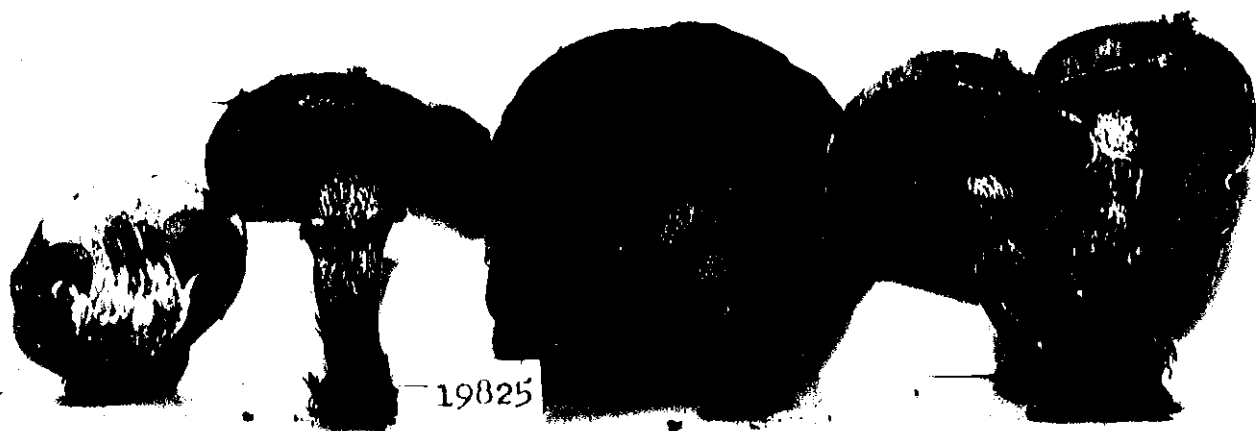


21003 - *Boletus luteus* L.

19267.



19267- *Boletus luteus* L.



19825 - *Boletus luteus* L.

12936

Boletus melleoluteus sp. nov.

On soil, in woods

Cades Cove

Coll: L. R. Hesler

Sept. 13, 1940

Det: W. H. Snell

Pileus 3 cm. broad, convex, viscid, Chamois (R.), appressed-fibrillose. Flesh pale yellow, slightly blue about 10 minutes after being cut; odor slightly of citronella, taste mild. Tubes pale yellowish, greenish when bruised, adnate, slightly depressed around stipe, rotund. Stipe pale yellowish, base yellow-mycelioid, solid, glabrous, dry. Spores 9-11 x 4-5 μ .

Snell says: ⁱsimilar to (nearly same as) #12890; i. e., either a new species or B. flavissimus Murr. - a Fla. species.

14686

Boletus melleoluteus Snell, Dick & Hesler

On roak-bank

Highlands, N. C.

Coll: L. R. Hesler

Sept. 4, 1942

Det: W. H. Snell

Pileus convex, 2.5-5 cm. broad, color variable:

yellowish, olive to greenish or brownish, tomentose, dry.

Flesh thick, margin thin, soft, ivory-yellowish, sparingly blue when cut; odor mild, taste none. Tubes whitish, then greenish, not blue when bruised, slightly depressed around stipe, 1-3 per mm., about 3 mm. long. Stipe 2-3.5 cm. x 8-15 mm., tomentose, dry, dingy, hollow. Spores 9-11 x 3-4 μ .

17993 Boletus melleoluteus Snell, Dick & Hesler

On soil, mixed hemlock-pine-frondose woods

Cades Cove

Coll: L. R. Hesler

Sept. 6, 1947

Det: W. H. Snell

Pileus 3-7 cm. broad, convex, "primuline yellow" at first, "chamois" at maturity, dry, matted-tomentose, at first somewhat powdery. Flesh thick on disk, thin at margin, "massicot yellow," slowly turning slightly blue when cut, blue color disappears on standing; odor and taste mild. Tubes white at first, finally "deep sea-foam green", darker green when bruised, adnate, slightly depressed around stipe, rounded, about 2 per mm., up to 8 mm. long. Stipe 3-6 cm. x 8-12 mm., dry, concolorous with pileus, equal, curved, apex usually white, not reticulated, fibrillose, base yellow-mycelioid, solid, yellow within. Spores cylindrical-ellipsoidal, 9.5-11 x 4-4.8 μ , smooth, "light brownish olive" in mass. Cystidia hyaline, upper half filled with oily substance, cylindrical-bottle-shaped, 50-65 x 8-11 μ .

Seems close to B. flavissimus Murr. (Mycologia 30: 522-523. 1938.)

12890

Boletus melleoluteus sp. nov.

In deciduous woods

Cades Cove

Coll: L. R. Hesler

Sept. 1, 1940

Det: W. H. Snell

Pileus 4-6 cm. broad, convex, Chamois (R.), streaked reddish, moist, not viscid, glabrous. Flesh thick, firm, white, tinged greenish throughout when cut; odor mild, taste mild. Tubes adnate-subdecurrent, yellowish, green when wounded, somewhat angular, up to 13 mm. long. Stipe 4-6 cm. x 1-1.5 cm., concolor, not reticulate, dry, fibrillose, solid. Spores 8-10 x 3-4 μ , elliptical.

See 12936.

17125

Boletus melleoluteus sp. nov.

Soil, woods

Cades Cove

Coll: L. R. Hesler Aug. 25, 1945

Det: W. H. Snell

Pileus 2-2.5 cm. broad, tomentose, dry, "honey
yellow." Flesh pale yellow, slightly blue when cut. Tubes
pale yellow and stuffed when young, yellow when mature.
Stipe tomentose, not reticulate, yellowish stained.



23324 - *Boletus melleolutes* Snell, Rick, + Hesler



20543 - *Boletus melleoluteus* Snell, Dick & Hesler

12937

Boletus miniato-olivaceus Frost (?)

In woods, Cades Cove

Coll: L. R. Hesler

Sept. 13, 1940

Det: W. H. Snell

Pileus 8-12 cm. broad, convex, brown (Ochraceous Tawny to Sayal Brown), not viscid, with densely matted fibrils. Flesh thick, firm, yellow, quickly blue (nearly bluish-green) when wounded; odor pleasant (suggesting ripe apples); taste mild. Tubes bright yellow, promptly turning green then dark blue, variable in size, many small with larger ones scattered, adnate depressed around stipe, about 8-10 mm. long. Stipe 7-15 cm. x 1.5-3 cm., not reticulated, furfuraceous, rigid, cavernous from grubs, reddish or yellow on upper half with splashes of red, red below, enlarged downward, dry, blue when rubbed. Spores elongated-ellipsoid, 9-12 x 3.4-3.8 μ .

Close to B. speciosus (?).

17066

Boletus miniato-olivaceus Frost

Soil, frondose woods

Cades Cove

Coll: L. R. Hesler

July 4, 1945

Pileus 7-10 cm. broad, convex, tomentose (under lens), dry, gray-brown (not matched). Flesh white, quickly blue, soft. Tubes greenish, blue when bruised. Stipe 5-7 cm. x 12-18 mm., not reticulated, tomentose, pale yellow at apex pinkish at base, quickly blue when bruised. Spores 12-14 x 3.5-4 microns (spore-print failed).

See: Snell's letters of Oct. 17, 1949 and of Aug. 11, 1940.

13790

Boletus miniato-olivaceus Frost

On soil, oak woods

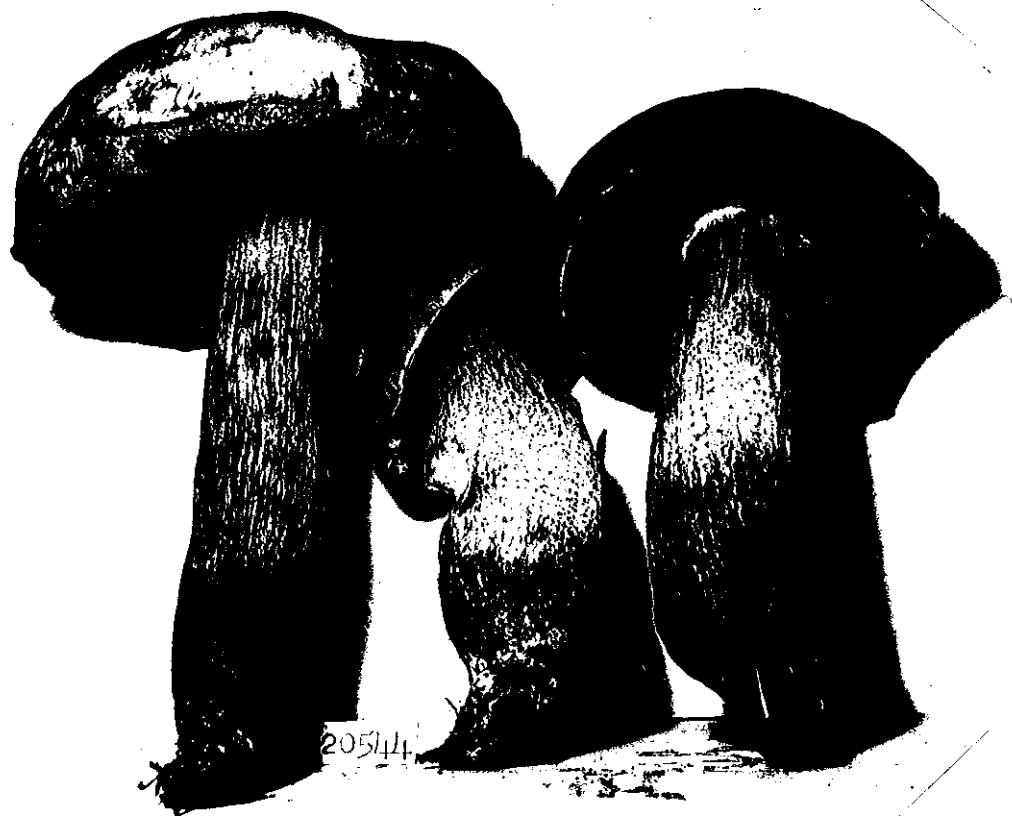
Cades Cove, Tenn.

Coll: L. R. Hesler

July 12, 1941

Det: L. R. Hesler

Pileus 6-9 cm. broad, convex, tomentose (under lens), soft and velvety to touch, reddish (Etruscan Red to Dark Vinaceous, R.), dry. Flesh thick, firm, white to pale yellow, quickly blue when cut; odor pleasant, taste somewhat bitter. Tubes adnate, grayish green, with a zone of tubes pinkish salmon around apex of stipe, blue to bluish-green when bruised, short, rounded, small, about 3 per mm. Stipe 8-13 cm. x 10-15 mm., dingy with olive and red tints, not reticulated, pruinose except base which is tomentose, solid, spongy within. Sporoes 8-9 x 4-5.5 μ , elliptical, pale smoky olive in mass (near Light Grayish Olive, R.).



20544 - *Boletus morisii*Pk.



21/17

Boletus morrisii

17673

Boletus niveus Fr.

In woods, Cades Cove

Coll: L. R. Hesler Aug. 11, 1946

Det: Coker

Pileus 3-5 cm. broad, viscid-lubricous when wet, ground color white, with scattered olive fibrils. Flesh white, unchanging, thick, soft; odor and taste mild. Tubes white then pallid, not changing when bruised, depressed at stipe. Stipe 5-7 cm. x 3-5mm., dry, color similar to pileus, and with olive fibrils, curved at base, solid. Spores smooth, ellipsoidal, 14-16(19) x 4.5-5 μ .

Seems close to B. scaber and B. niveus.

13817

Boletus nobilis Pk.

On soil, woods

Cades Cove, Tennessee

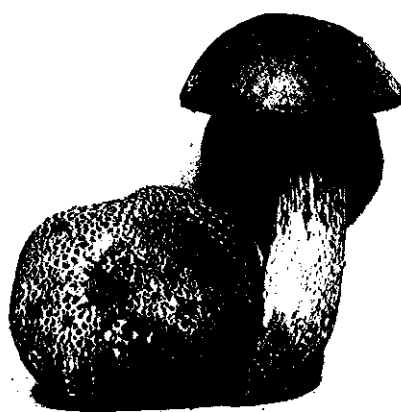
Coll; L. R. Hesler

Det: W. H. Snell July 12, 1941

Pileus 6-12 cm., convex, somewhat viscid, glabrous smoky olive brown (near Isabella Color). Flesh thick, firm, white, unchanging; odor and taste mild. Tubes white, stuffed when young, finally tawny-yellowish, about 2 per mm., 8-12 mm. long, adnate, slightly depressed. Stipe 10-15 cm. x 15-20 mm., concolor above, whitish below, reticulate throughout, spongy-stuffed. Spores (not studied).

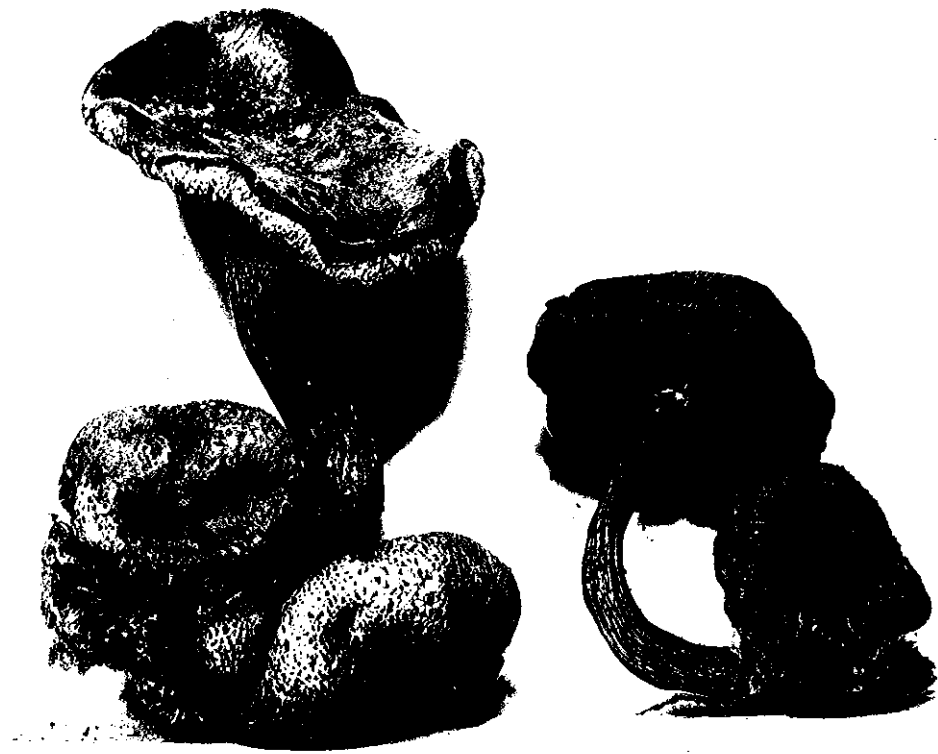


12211 - *Boletus pallidus* Frost



24882

24882 - *Boletus parasiticus* Fr.



Boletus parasiticus Fr.

18561

Boletus parvulus Coker & Beers

On soil, oak woods

Tobler Road, Knoxville

Coll: Mrs. A. J. Sharp

July 18, 1948

Pileus 1-3 cm. broad, dry, velvety, "antique brown" when young, becoming "Kaiser brown" to "Hay's russet". Flesh pale yellow, changing slightly to blue-green when cut, finally rosy-tinted, thick, soft; odor and taste mild. Tubes adnate by a line, depressed around stipe, up to 4 mm. long, yellow then olive-greenish to greenish-yellow, blue then reddish when rubbed. Stipe 2-3 cm. x 4-6 mm., pallid all over or pallid above and dingy downward, base yellow, dry, granular all over, equal or slightly enlarged downward, often crooked, solid. Spores 9-11.2 x 4-4.8 μ , brownish under 'scope.

See Snell's letter of October 17, 1949.

13913

Boletus parvulus sp. nov.

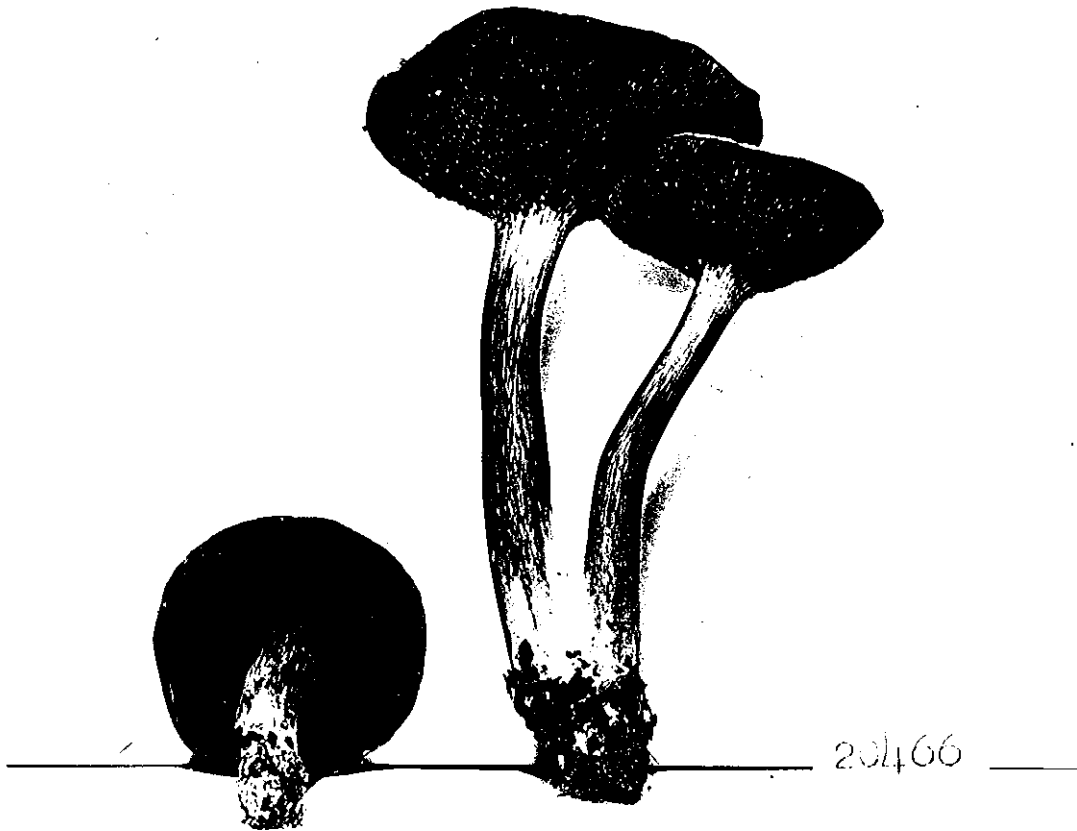
In woods, Mt. LeConte

Coll: L. R. Hesler

Det: W. H. Snell Aug. 8, 1941

Pileus 18 mm. broad, tomentose, viscid (wet),
Walnut Brown (R.). Flesh thick, firm, whitish, slightly
pinkish when cut. Tubes adnate, near Russet (R.), unchanging.
Stipe 3 cm. x 5 mm., solid, concolor to pileus, minutely
dotted, base yellow, not reticulate, yellowish within.

Spores 7-9 x 2.5-2.8 μ , elongate.



20466 - *Boletus piperatus* Bull.

17085

Boletus plumbeoviolaceus Snell & Dick

In oak woods

Cades Cove

Coll: L. R. Hesler

Aug. 8, 1945

Pileus 5-9 cm. broad, dry, densely tomentose (under lens), near "verona brown". Flesh thick, soft, white, unchanging, bitter. Tubes at first adnate, then depressed, white then flesh (not matched), 1-2 per mm., 10 mm. long. Stipe 5-8 cm. x 15-20 mm., not reticulated, flexuous or strict, equal or tapering slightly either way, "deep heliotrope gray", white within, solid, cavernous from grubs. Spores pale (under scope), smooth, 11-12 x 4 μ .

A form of B. felleus?

29230

BOLETUS PROJECTELLUS Murr.

PHOTO

in deep pine needles, under young pine trees,
near Chilhowee, Aug. 25, 1966

Pileus 4-7 cm broad, viscid, convex, "chestnut" to "chestnut brown," or "mahogany red," matted-fibrillose, fibrils pallid then darker, with a distinct, projecting sterile margin. Context whitish, distinctly tinged pinkish, thick; odor and taste mild.

Tubes deeply depressed, yellow at first, stuffed, at maturity becoming greenish yellow, unchanging where bruised, not reaching the margin.

Stipe 10-15 cm x 11-16 mm (apex), tapering upward (stipe 16-22 mm at base), base usual curved, strongly reticulated above, reticulations less distinct below, "vinaceous fawn" to "fawn color," solid.



29230

29230. *Boletus projectellus* Murr.

12934

Boletus pseudodecorus Snell & Dick

On soil, woods

Cades Cove

Coll: L. R. Hesler

Sept. 13, 1940

Det: W. H. Snell

Pileus 6-10 cm. broad, convex, dry, fibrillose-velvety, or tomentose, near Mikado Brown (R.). Flesh thick, firm, white, unchanging; odor and taste mild. Tubes white from first, staining brown when rubbed, sub-rotund, about 8 mm. long, abruptly depressed at stipe. Stipe 5-8 cm. x 1-3 cm., tapering upward, enlarged at base, solid, dry, upper half minutely and beautifully reticulated, pruinose-velvety or furfuraceous, brownish. Spores 9-11 x 3.5-4.5 μ , ellipsoid.

18987 Boletus pulverulentus f. reticulatus Snell, Dick & Hesler
On lawn, Tobler Road, Knoxville
Coll: A. J. Sharp, June 15, 1949
Det: W. H. Snell

Pileus 3-5 cm. broad, convex, dry, "buffy brown" to "snuff brown", often with pinkish or pale rose areas, blue-black when handled, with a short tomentum, with a narrow sterile margin. Flesh yellow, quickly blue when cut, thick, firm; odor slight of raw potatoes, taste mild. Stipe 3-4 cm. x 6-14 mm., dry, more or less reticulated, slightly enlarged above and often constricted at apex, equal or tapering at base, yellow, quickly dark blue when handled, interior yellow, quickly blue when cut, solid. Tubes not stuffed at first, "citron yellow" to Pinard yellow" (both when young and mature), quickly bluish-green when bruised, up to 7 mm. long, slightly elongated-angular radially, 1-2 per mm., adnate, usually somewhat depressed around stipe, decurrent and ending in ridges and reticulations on upper portion of stipe. Spores 12-16 x 4.5-6 μ , smooth, olive-brownish (under 'scope), color in mass: near "orange-citrine". (?)

See: Snell's letters of Nov. 29, 1950 and Nov. 20, 1950.

19314 Boletus pulverulentus Opat. f. reticulatus Snell,
Dick & Hesler
(same as #18987)

A. J. Sharp's lawn

A. J. Sharp and L. R. Hesler Sept. 4, 1949

Pileus 2-7 cm., "buffy brown" (young), at maturity "snuff brown" to "mummy brown", often with pinkish or pale rose areas, densely matted-tomentose, dry to sub-viscid, but viscid after being wetted for some minutes, margin sterile and incurved (strongly so in youth). Flesh up to 15 mm. thick on disk, firm, yellow, quickly blue when cut, the blue color soluble in water and largely disappears on standing; odor slight of raw potatoes; taste mild. Stipe 3-7 cm. long, 6-20 mm. diam. (apex), equal or apex slightly constricted, at times compressed, apex bright yellow with inconspicuous reticulations, elsewhere tinged salmon to orange-yellow with conspicuous reticulations, and becoming more reticulate at maturity than in youth, quickly blue when handled, often becoming dark red, dry, solid, flesh of stipe yellow, quickly blue. Tubes adnate-decurrent, usually somewhat depressed around stipe, up to 10 mm. long, angular, 1-2 per mm., elongated radially behind, separable from pileus, "citron yellow" to "Pinard yellow" (both young and mature), greenish blue when rubbed, not stuffed when young. Spores in mass; "light brownish olive", "deep olive", to "buffy olive", smooth, 11-14.5 x 4-5.5 μ . Cystidia none.

Singly or in 2's or 3's by connate base.

Snell found cystidia like those of B. pulverulentus Opat. Singer gives them as 34.5-41 (65) x about 9 μ ; fusoid- (over)

ampullaceous. . . .

See: Snell's letters of Nov. 29, 1950 and Nov. 20, 1950; and W. C. Coker's letter of Sept. 1, 1949.



19314 - *Boletus pulverulentus* f. *reticulatus*
Snell, Dick & Hesler



18987 - *Boletus pulverulentus* f. *reticulatus*
Snell, Dick & Hesler

4497

Boletus Ravenelii B. & C.

Soil. Mt. LeConte

Coll: L. R. Hesler

Det: A. C. 7 - 20 - 34

Old specimen. No veil. Yellow pulverulence.
disappeared except slight remnant on cap.

5367

Boletus ravenelii B. & C.

Soil, under crab-apple

Rich Mt. road, Cades Cove

Coll: A. J. Sharp

Aug. 14 - '34

No annulus; plant distinctly yellow colored;
pileus viscid. Flesh whitish, tubes pale yellow - no color
change in either - mouths orange from shed spores (or cystidia?).



Boletus rarendlii



19154 - *Boletus ravenelii* B+C.



25652

25652 - *Boletus retipes* B. + C.



20540 - *Boletus roxanae* Frost

6269

Boletus rubeus Frost

Montvale

Coll: L. R. Hesler

Det: Snell

Aug. 23

Pileus with distinct red color; not reddish beneath cuticle. Stipe red-tinged or streaked but not as brightly colored as pileus. Yellowish tomentose base.

13816

Boletus rubeus Frost

On lawn, Knoxville (Dr. Mack's)

Coll: R. M. Boarts

July 8, 1941

Det: W. H. Snell

Pileus 2-6 cm. broad, red (Pompeian Red), hardly viscid even after wetting, glabrous but appearing velvety or at times pruinose. Flesh yellow, unchanging; odor and taste mild. Tubes adnate, depressed at stipe, near golden yellow (near Primuline Yellow), irregularly rounded to daedaloid, bluish-green on bruising (slightly and slowly). Stipe 3-6 cm. x 5-12 mm., somewhat yellowish but streaked rhubarb-color, dry, solid, glabrous, flesh slightly blue-green when cut, enlarging slightly upward. Spores 10-12 x 4.5-5.5 μ , elliptical, pale under 'scope, near Grayish Olive (R.) in mass.

13849

Boletus rubeus Frost

In mixed woods

Near Mt. LeConte

Det: W.H. Snell July 20, 1941

Pileus 5-7 cm. broad, with red tomentose surface, dry. Flesh white, soft, pale yellow; blue when cut. Tubes yellow, blue when bruised, large, angular. Stipe 5-8 cm. x 8-10 mm., red from tomentum, base dark red velvety, dry, not reticulated, flesh yellow, quickly blue when cut. Spores (not studied).

19698

Boletus rubropunctus Pk.

Fightin' Creek Gap (G.S.M.N.P.)

Coll. & Det.: L. R. Hesler, August 6, 1950

Pileus 3.5-4 cm. broad, viscid, pellicle entirely separable, glabrous, surface streaked and somewhat pitted, brown ("tawny olive"), blackish when bruised. Flesh white, unchanging, firm, taste slightly acid. Tubes depressed, pale yellow, finally greenish, brown (rubbed), small. Stipe 7 cm. x 8 mm. (\pm), hard, white above, rhubarb below, tapering upward, subscabrous dotted all over, solid. Spores color in mass: "light brownish olive", 14-17.5 x 4.5-5.5 microns.

(Same as one collection before.)

18601

Boletus rubropunctus Pk.

In humus, frondose-pine woods

Cades Cove, near White Oak Sinks

Coll: L. R. Hesler

Aug. 22, 1948

Pileus 3-5 cm., viscid or nearly glutinous, "honey yellow" to olive-greenish with reddish brown reticulations, glabrous. Flesh white, unchanging; odor and taste mild. Tubes depressed, pale yellow then greenish. Stipe 6-8 cm. x 6-8 mm., dry, rhubarb-tinted with brownish granular dots throughout, solid, equal or tapering upward. Spores 14-17 x 5-7 μ , smooth.

Cf. #19333.

17997

Boletus Russellii Frost

In humus, woods

Cades Cove

Coll: S. L. Meyer Sept. 3, 1947

Det: L. R. Hesler

Pileus 5 cm. broad, convex, sub-viscid (when wet), near "clay color", with numerous, scattered, dark fasciculate squamules. Flesh soft, white, rose when cut; odor slightly of ripe pears; taste mild. Tubes greenish, not changing, depressed around stipe, 8 mm. long, about 2 per mm. Stipe 8 cm. x 6 mm., strongly reticulated throughout, ground-color pallid, with granular dots, tapering upward (as in B. gracilis), dry. Spores 14.5-19 x 8-9.5 μ , longitudinally striate.



20535 — *Boletus russellii* Frost



2b

24877 - *Boletus scaber* Fr.

29949

BOLETUS SCABER

Cades Cove, August 12, 1967

Pileus olive-green, pitted-rugose. Tubes dingy, darker where bruised. Flesh white, pinkish (cut); odor and taste mild. Stipe pallid, densely black-dotted.

Spores in deposit olivaceous.



Boletus sordidus

THE UNIVERSITY OF TENNESSEE

Tylopilus porphyrosporus var *porphyrosporus*
(Fr. in Fr. & Hok) Smith & Thiers

ANNOTATED 14 June 19 78 BY CB Wolfe

29876

BOLETUS SORDIDUS Frost

On soil, deciduous woods, Horse Cove, July 12, 1967

Pileus velvety-rimose, near smoky wood-brown. Tubes pallid, at once blue or blue-green, especially when rubbed.

Stipe smoky, clavate, with a green ring at apex, internally green.

13979

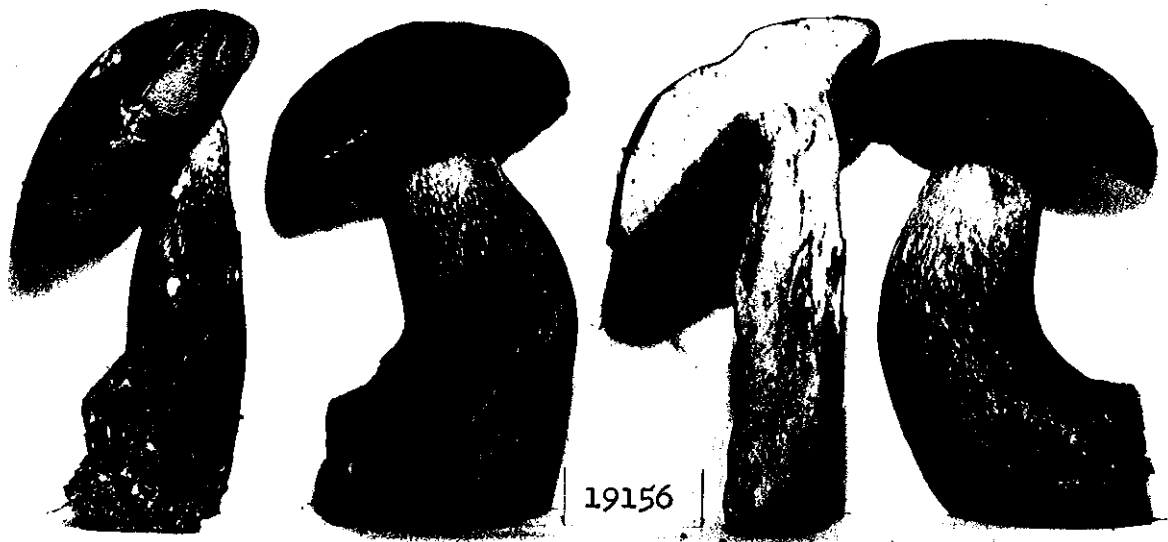
Boletus speciosus Frost (?)

Near Mt. LeConte

Aug. 23, 1941

Det: W. H. Snell

Pileus 8 cm. broad, Vinaceous Russet (R.), tomentose, dry. Flesh thick, soft, yellow, faintly tinted bluish when cut; odor and taste mild. Tubes adnate, small, yellow, unchanged when bruised, 10 mm. long. Stipe 8 cm. x 12 mm., reticulated to base, apex yellow, elsewhere concolor to pileus. Spores 8-9 x 3-3.5 μ , elliptical.



19156 - *Boletus speciosus* Frost

10041

Boletinus squarrosoides Snell & Dick

On hemlock stump, G.S.M.N. park

Cosby, Tennessee

July 30, 1936

Pileus 2.5-6 cm., convex, viscid, brown (Bay, Chestnut, or Auburn, R.), densely tomentose, the tomentum short and reddish. Flesh thick, thin at margin, white, unchanging, taste mild. Pores dingy whitish to dingy yellowish, more or less in radial rows, elongated radially, rather large (2-5 mm. long), edges not differently colored, adnate-decurrent to decurrent, often forming reticulations at apex of stipe. Stipe 4-6 cm. x 4-10 mm., solid, somewhat viscid, base concolorous to pileus, paler above, minutely dotted, equal or slightly enlarged at base, 2-4 stipes joined at base.

Spores Yellow Ochre (R.) in mass, elliptical 9-10 x 3.8-4.5 μ .

Closer to Boletinus squarrosoides Snell & Dick (Mycologia 28:468. 1936) than to Boletinus castanellus, but does not fit either precisely (see letter, Snell, April 3 - '37.).

11555

Boletus subglabripes Pk.

Cades Cove, Tenn.

Coll: L. R. Hesler

June 30, 1938

Det: W. H. Snell

Pileus 13 cm. diam., plane, ochraceous-brown, dry (subviscid ?), pruinose (under lens). Flesh white, not changing color, thick and soft. Tubes greenish, not changing on injury, about 15 mm. long, up to 1 mm. diam., angular. Stipe 8 cm. x 2.5 cm., scaly, dry, yellow at apex and base, pinkish (rhubarb tint) elsewhere, spongy (from insects ?), not reticulated. Spores subfusoid, 10-12.5 x 3.5-5.5 μ .

14466

Boletus subtomentosus L.

On soil, woods

Cades Cove

Coll: L. R. Hesler

July 29, 1942

Det: W. C. Coker

Pileus 4-6 cm broad, Naples Yellow, dry, glabrous. Flesh white to slightly yellow, slowly and slightly blue when cut, the blue color soon disappearing, firm, thick; odor and taste mild. Tubes yellowish-green, small, watery brown when bruised. Stipe 5-6 cm. x 10-15 mm., tapering downward, dry, glabrous, not reticulated, solid. Spores 9-12 x 3.5-4 μ , ellipsoid, pale, smooth.

Could this be B. melleoluteus Snell, Dick & Hesler?

5000

Boletus subtomentosus L.

Mt. LeConte

Coll: A. J. Sharp

July 20 - 1934

Det: A. C.

Probably a form (smooth stipe). Pileus leathery, brown, cracked, showing white flesh beneath; flesh has faint pink tinge. Spores 3 x 10 μ . Stipe 1.25 cm. diam., equal above, not reticulated.

17771

Boletus sulphureus Fr.

On saw-dust

Claxton's School, Anderson Co., Tenn.

Coll: L. R. Hesler

Nov. 10, 1946

Pileus 6-11 cm. broad, convex, compact, caespitose, viscid when wet, "lemon yellow", "light greenish yellow", "strontian yellow", to "citron yellow", paler (whitish) when dry, appressed floccose-tomentose, apparently glabrescent, margin inrolled. Flesh compact-soft, concolor to pileus or paler, thick, unchanging or faintly blue when cut; odor and taste mild. Tubes adnate to subdecurrent, yellowish, finally greenish-yellow (near "olive lake"), promptly becoming blue on bruising, dark reddish-brown after being dried, rounded-angular and 0.5-1 mm. in diameter, or angular-elongated radially and compound and then 3-6 (12) mm. in radial diameter. Stipe 4-7 cm. x 1-3 cm., slightly viscid, concolor to pileus (without and within), base stained brownish, innately fibrillose, not reticulate, equal or ventricose, or enlarged upward, solid. Spores 5.5-7 (8) x 3.2-3.5 (4) μ , ellipsoidal, smooth. Mycelium yellow (like pileus).

See: Letter from W. C. Coker, November 22, 1946.

See: Amer. Mid. Nat. 37: 3-4. Jan. 1947 by Singer.

17130

Boletus tennesseensis Snell & Smith

In frondose woods

Oades Cove

Coll: L. R. Hesler Aug. 24, 1945

Det: Snell

Pileus 8-12 cm. broad, olive-brown, near "Isabella color," dry, tomentose, rimose. Flesh soft, whitish, soon blue (flesh of stipe pinkish when cut), taste bitter. Tubes greenish-yellow, blue when bruised, adnate, small. Stipe 5-6 cm. x 2-3 cm., yellow at apex, elsewhere smoky-olive, reticulate at apex, tomentose, solid, flesh pallid, pinkish when cut. Spores 8-9 x 4-5 μ , ellipsoidal (not typical Boletus spores), smooth, greenish (under 'scope).

10865

Boletus vanderbiltianus Murr.

On soil, deciduous woods

Roan Mt. 4500'

Coll: L. R. Hesler Aug. 22, 1937

Det: Snell

Pileus 2.5-4.5 cm. diam., subtomentose, brown, not viscid. Flesh thick at disk, thin at margin, white, unchanging, taste bitter. Pores white, becoming flesh colored, brown on bruising, 4-6 mm. long, angular, depressed around stipe. Stipe 2-5 cm. x 5-8 mm., dry, concolor, not reticulated, subtomentose, solid. Spores 9.5-12 x 2.7-3.6 μ , elliptic-subfusiform, pale under microscope.

13815

Boletus variipes Pk.

On lawn

Fountain City (near Knoxville)

Coll: Karl Steinmetz

July 16, 1941

Det: W. H. Snell

Pileus 6-10 cm. broad, brown, near "Saccardo's
umber," dry, tomentum in dense tufts. Flesh thick,
firm, odor and taste mild, white, pinkish when cut.
Tubes adnate, depressed at stipe, greenish-yellow, somewhat
angular, greenish when bruised. Stipe 4-5 cm. x 12-25 mm.,
concolor, tomentose, glabrescent, reticulate all over (except
basal third), solid. Spores subventricose, 12-16 x 3.5-
5.5 μ , color in mass "olive brown" to "brownish olive".



20536 - *Boletus variipes* Ph.



23721 - *Boletus variipes* PK.

29353

BOLETUS VARIIPES PK.

on soil, woods, leg. Holton, Knoxville, Aug. 24, 1966

Pileus 6-11 cm broad, "light brownish olive" to "Isabella color," spotted and minutely areolate, densely short-tomentose, dry. Context white, slowly pinkish or unchanging; odor and taste mild.

Tubes adnate, white then greenish, unchanging, stuffed at first.

Stipe 6-8 cm long, 17-24 mm thick, olivaceous, unchanging, reticulate throughout, equal or subclavate, solid.

12826

Boletus vermiculosus Pk. (?)

On soil, woods

Laurel Creek (Cades Cove)

Coll: L. R. Hesler & A. J. Sharp

Det: Snell

Aug. 18, 1940

Pileus 10-13 cm. broad, convex-expanded, dry, pallid-ashy and tinged gray-brown (not matched in Ridgeway) natural color retained after being dried, glabrous. Flesh soft, thick, white, unchanging or bluish next to tubes; odor and taste mild. Tubes adnate, green, mouths red, green when bruised, about 0.5 mm. diameter. Stipe 10-12 cm. x 2-3 cm., grayish, with an olive tomentum (under lens), streaked red, dry, somewhat eccentric, solid, reticulate under lens and red-punctate on ridges, equal or tapering down. Spores long-elliptical, 9-11 x 3-3.5 μ , olive-brown in mass.

4242

Boletus sp.

Spores rather short-elliptic, smooth, 3.8-4.8 x 7.5-9.3 (-10) μ .

Coker does not know it. Needs notes!

8-12 x 4-4.5 μ . Stipe dark red, apex paler, not at all reticulated. Otherwise goes to, and agrees with B. frostii Russell.

Spores slightly smaller than B. Sullivantii, otherwise agrees.

Lent to Coker Oct. 4 - '37 (Same as 4474).

4492

Boletus (chrysenteron Fr.?)

Pileus: rimose-areolate; distinct pink tone between brown patches. Flesh white; no color change (old specimen). Tubes greenish yellow changing to blue when wounded.

Spores 4 x 13 μ . Stipe yellow within at base; slightly radicate, velvety; streaked with red at base but pale above.

This fits B. chrysenteron Fr. better than anything else. Color of flesh is main difference.

4493

Boletus (cyanescens Bull.?)

On soil, under chestnut

Cades Cove 7 - 2 - 34

Agrees well with *B. cyanescens* except:

Spores 7-8 x 4.2-4.8 μ

Tubes hardly free, more narrowly adnate; white.

Pileus up to 4 cm. diam.

Stipe up to 5 cm. x 2 cm.

6259

Boletus sp. (near badius Fr.?)

Pileus convex, becoming involute with age; soft, viscid (yet not having a separable viscid pellicle as in Viscipellus). Sub-tomentose, tawny chestnut color; flesh whitish with distinct pink coloration upon wounding. Taste mild.

Tubes large, angular, dingy yellow; quickly changing to blue upon wounding, adnate (in some cases slightly decurrent).

Stipe colored like flesh within, bulbous (2 specimens) with white tomentum at base only. Stem tawny with reddish streaks. Smooth (one specimen with reticulations at top of stem only). Red color conspicuous at very top of stipe (to $\frac{1}{4}$ in. below tubes).

Spores mostly 11-13 x 4-4.5 μ (a few 17 x 6 μ).

Measurements:

Largest specimen.

Cap: 7 cm. wide; 3 cm. thick

Stipe: 2 cm. top; 4 cm. widest part of bulb;
6.5 cm. long.

Smallest specimen:

Cap: 4.5 cm. wide; 1.5 cm. thick.

Stipe; 0.5 cm. at top; 1.5 cm. at base.



23390

Boletus

Photo

On soil, oak woods

Pellissippi, near Norris, Tennessee

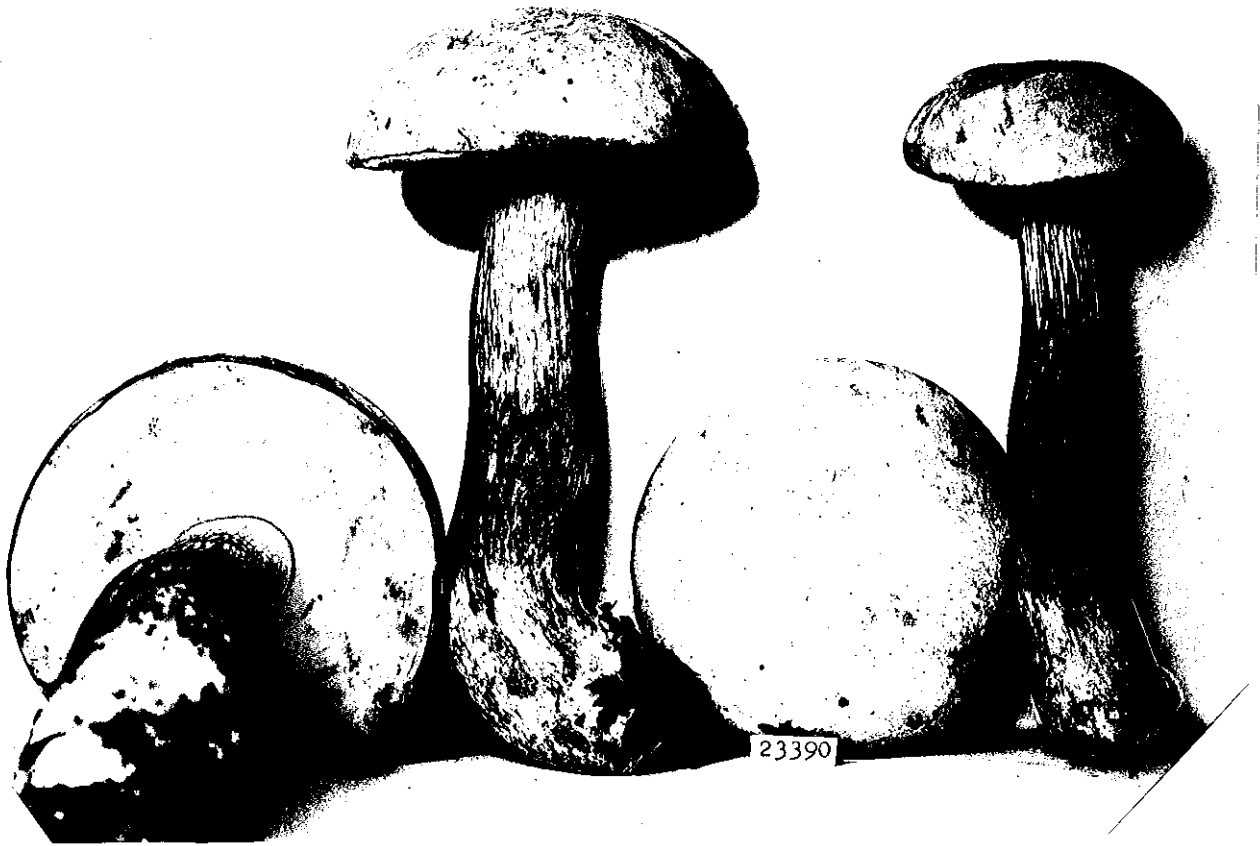
Coll: M. Boarts

Sept. 12- '59

Pileus 5-9 cm. broad, convex, expanding-convex, dull white, becoming slightly stained yellowish to dingy brown, dry, minutely pruinose-velvety, margin even. Flesh white, unchanging, thick, firm; odor none, taste bitter. Tubes depressed around the stipe, white, finally faintly flesh-tinted, becoming dingy rusty-brown when rubbed, slightly angular, stuffed when young, 2 per mm., up to 12 mm. long. Stipe 10-16 cm x 15-20 mm., "yellow ocher", to "old gold" to "aniline yellow", apex white, upper fourth reticulate, elsewhere slightly pruinose-velvety, equal or enlarged downward, at times clavate to subventricose, dry, solid, flesh white, unchanging.

Spores 9-12 x 3-4 μ (from deposit), ellipsoid, smooth, in mass: "vinaceous-fawn".

Snell (Letter Oct. 1-'59) says it is a new species, a Tylopilus, Sec. Fellei.



23390 - *Boletus*

23474

Boletus
in mixed woods
Highlands, N. C., October 4, 1959

Pileus 5 cm. broad, "ocher red," densely short tomentose.
Flesh yellow, blue when cut, thick, soft; odor and taste
mild. Tubes yellowish-green with distinctly red mouths, blue
when wounded, 2 per mm., 5-6 mm. long. Stipe 6 cm. x 12 mm.,
pinkish-red, with greenish areas, clavate-enlarged, minutely
tomentose, solid.

Spores "light yellowish olive" to "yellowish olive."

24354 Boletus

on lawn, under oak
Johnson's, Timberlake Rd., June 24-61

Pileus "cinnamon brown", densely appressed tomentose, dry.
Context soft, white, unchanging; odor and taste slight. Tubes
yellow, unchanging, elongated radially at stem, adnate. Stipe
dingy brown, base yellow, firm, solid.

Spores in deposit: "buffy citrine" to "citrine drab".

Cf. *Boletinus squarrosoides*.

Boletus No. 24363

Photo

Pileus 10-13 cm., "verona brown", densely short-tomentose to short-fibrillose, not viscid. Context thick, white, soon yellow when cut, with traces of blue; odor and taste mild.

Tubes yellow, stuffed, becoming greenish, quickly blue where bruised, slightly depressed around stipe, 2-3 per mm.

Stipe 9-14 cm. x 25-32 mm., yellow above, tinged reddish below, finely reticulate more or less overall, blue when handled, flesh as in cap, solid, equal.



24363 - *Boletus*

Boletus No. 24417

Indian Creek, July 19-'61

Pileus "dark olive buff", dry, pruinose-velvety. Context whitish, slowly dingy-pinkish when cut, finally smoky; odor and taste mild.

Tubes white, blackish where bruised, deeply depressed, tube-surface uneven, probably not stuffed.

Stipe pallid with olive scales, discolored when handled, solid, firm, not reticulate.

Spore deposit: brownish-olive.

Pileus 1-3 cm., "Vandyke red" to "Hay's russet", cuticle cracking areolate, dry (slightly viscid when wet), densely velvety. Context pale yellowish, slowly blue (especially from tube-layer upward); odor and taste mild.

Tubes yellow then greenish yellow, promptly blue when bruised, stuffed at first, angular, about 2 per mm.

Stipe 2.5-4.5 cm. x 3-6 mm., reddish or rhubarb, base yellowish, apex reddish-punctate, equal or enlarged at apex, solid.

BOLETUS 24863

Pileus 4-8 cm., convex, densely appressed-tomentose, "buck thorn brown", dry. Context pale yellow, promptly blue where cut or bruised; odor and taste mild.

Tubes depressed around stipe, "primuline yellow", promptly blue where bruised, pores 1-2 per mm., more or less angular.

Stipe 6-7 cm. x 10-20 mm., not reticulate, densely covered with reddish dot-like scales (rhubarb-like), yellowish above, darker red below, solid, equal, or slightly flaring at apex.



24903

24903 - *Boletus parasiticus* Fr.

24931

BOLETUS

Pileus reddish-brown, with tiny reddish tomentose-fibrillose tufts (scales; under lens). Context yellow, unchanging; odor and taste mild.

Tubes depressed, greenish, blue where bruised, mouths red.

Stipe olivaceous above, rhubarb-dotted below, clavate, firm, solid, not reticulate.

Spores in deposit: "brownish olive".

BOLETUS No. 25591

in oak woods, Norris Dam, June 22, 1963.

Pileus brown, rugose. Context white.

Tubes yellowish-green, then green.

Stipe apex yellowish, brownish or reddish and scurfy downward.



25574

25574 - *Strobilomyces floccopus* (Vahl ex Fr.) Karst.

BOLETUS No. 25657

in deciduous-hemlock woods, Cades Cove, July 5, 1963.

Pileus minutely velvety or tomentose-tufted, "sudan brown". Context soft, white but faintly tinted yellow, unchanging; odor sub-pungent, taste mild.

Tubes obscurely depressed, greenish, unchanging.

Stipe "mustard yellow", longt. striate, solid, with a subcalvate base.

BOLETUS No. 25682

in decid. wood, Deep Creek, July 11, 1963.

Pileus velvety, reddish-brown. Context pink then blue when cut; taste mild. Tubes yellowish, mouths red. Stipe reticulate in upper half, more or less reddish "glandular" below.



26315

26315 - *Boletus*



25779

25779- *Strobilomyces floccopus* (Vahl ex Fr.) Karst.

BOLETUS 25797

In pine woods, Cades Cove, Aug. 1, 1963.

Pileus "ochraceous salmon," viscid, more or less fibrillose.

Tube surface at first more or less concolor, finally greenish, tubes stuffed when young, with reddish-brown glandular dots.

Stipe concolor, with reddish-brown glandular dots.

26273

BOLETUS

PHOTO

Pileus "chestnut-brown" to "cameo-brown", viscid.
Context dingy gray, unchanging. Odor mild, taste slight.
Tubes depressed, dingy grown then near "Dresden brown",
stuffed. Stipe grayish plumbeous (not matched), punctate-
dotted all over.

26315

BOLETUS

PHOTO

in mixed woods, Metcalf Bottoms, Sept. 1, 1964

Pileus "buckthorn brown," at times tinted pale purplish, densely short-tomentose, becoming areolate-cracked. Context white, unchanging, soft-spongy, thick.

Tubes depressed, white, dingy-brown where bruised.

Stipe dingy brown, reticulate at very apex only.

29209

BOLLETUS

On soil, Cades Cove, July 20, 1966

Pileus dingy brown or tawny (not matched), minutely short-tomentose. Context white, unchanging; odor mild, taste bitter. Tubes pale flesh to whitish, pinkish brown where bruised.

Stipe concolorous, with fibrils forming a slight reticulum, solid.

Spores in deposit: "vinaceous buff."

29902

BOLETUS

PHOTO

Soil, woods (pine), Horse Cove, August 26, 1967

Pileus pale brown, glutinous. Flesh white, unchanging. Stipe white, punctate-dotted above, solid.

30220

BOLETUS

In hemlock woods, Roaring Fork, GSMNP, July 17, 1968.

Pileus "Isabella color", or darker (near "orange-citrine") plush-like, viscid. Context soft, spongy, white, unchanging. Tubes whitish then pale olive, unchanging or slightly brown where rubbed. Stipe whitish with an "isabella color" band near apex, glabrous. Spores in deposit: olivaceous with a brown tint.

~~Boletus~~

35593

BOLETUS

Cades Cove, in mixed woods, September 11, 1970

Pileus 4.5 cm broad, rusty brown (not matched), soft and plush-like.
Flesh pale yellow, turning bluish-green when cut; odor and taste mild.

Tubes greenish, blue where bruised, about 3 per mm.

Stipe reddish brown, firm, bluish where bruised.

Spores in deposit "Andover green."

35684

BOLETUS

Under hemlock, Highlands, North Carolina, August 18, 1970

Pileus "Verona brown" with whitish spots, rugose, dry. Flesh white, when cut showing yellowish stains, thick, firm. Tubes depressed, white then dingy yellow, becoming slightly pale brown where rubbed. Stipe apex white, more or less concolor elsewhere, velvety, solid.

Spores "olive-ocher."